

=> file reg

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STRUCTURE FILE UPDATES: 23 JUN 2003 HIGHEST RN 536496-82-9  
DICTIONARY FILE UPDATES: 23 JUN 2003 HIGHEST RN 536496-82-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when  
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Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STN Note 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> file caplus

FILE 'CAPLUS' ENTERED AT 15:32:46 ON 24 JUN 2003  
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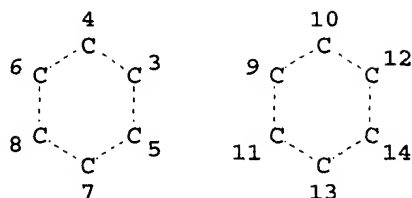
FILE COVERS 1907 - 24 Jun 2003 VOL 138 ISS 26  
FILE LAST UPDATED: 23 Jun 2003 (20030623/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d que

L1 STR

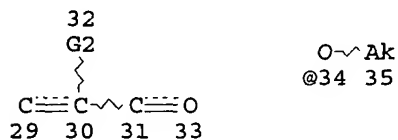
KOROMA EIC1700



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE  
 L2 STR



VAR G2=H/X/CN/AK/34  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
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STEREO ATTRIBUTES: NONE  
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 L6 SCR 1084  
 L7 SCR 1054  
 L8 SCR 1153  
 L12 SCR 1015  
 L14 43285 SEA FILE=REGISTRY SSS FUL L1 AND L2 AND L5 AND (L6 OR L7 OR L8 OR L12)  
 L15 26097 SEA FILE=CAPLUS ABB=ON PLU=ON L14  
 L16 16 SEA FILE=CAPLUS ABB=ON PLU=ON L15 (L) FILM (4A) RETARD?  
 L17 2807 SEA FILE=CAPLUS ABB=ON PLU=ON L15 (L) LIQ? (4A) CRYSTAL?  
 L18 1399 SEA FILE=CAPLUS ABB=ON PLU=ON L17 AND (SPN OR PREP OR IMF) /RL  
 L19 54 SEA FILE=CAPLUS ABB=ON PLU=ON L18 AND PHOTOLENS?  
 L20 395 SEA FILE=CAPLUS ABB=ON PLU=ON L18 AND ?FILM?  
 L21 421 SEA FILE=CAPLUS ABB=ON PLU=ON L19 OR L20

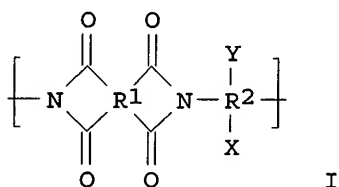
L24 28 SEA FILE=CAPLUS ABB=ON PLU=ON L21 AND ?FILM? AND PHOTSENS?  
AND LIQ? (3A) CRYSTAL?  
L25 44 SEA FILE=CAPLUS ABB=ON PLU=ON L24 OR L16

=> d ibib abs hitstr ind total

L25 ANSWER 1 OF 44 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2003:353731 CAPLUS  
DOCUMENT NUMBER: 138:376394  
TITLE: Polyimide-based photosensitive resin compositions  
containing fireproofing agents and flame-retardant  
dry-film resists using the compositions  
INVENTOR(S): Takakawara, Kaoru; Okada, Yoshifumi  
PATENT ASSIGNEE(S): Kanegafuchi Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003131371	A2	20030509	JP 2001-325927	20011024
PRIORITY APPLN. INFO.:			JP 2001-325927	20011024

GI



AB The resin compns. contain (A) sol. polyimides having .gtoreq.1 repeating unit I [R1 = tetravalent org. group; R2 = arom. ring-contg. 3- or 4-valent group; X, Y = org. group; X and/or Y = R3CH:CH2 (R3 = divalent org. group)], (B) compds. having P, halo, or siloxane moiety via a conjugated bond, (C) (meth)acrylic compds. having .gtoreq.1 C-C double bond, and optionally (D) photoinitiators and/or sensitizers. Also claimed are photosensitive dry-film resists, useful as cover-lay films for flexible printed circuit boards, hard disk head, etc., prepd. using the compns. The resin compns. have good workability, alkali developability, and show no warp when laminated with a polyimide film.

IT 64401-02-1, NK Ester A-BPE 30

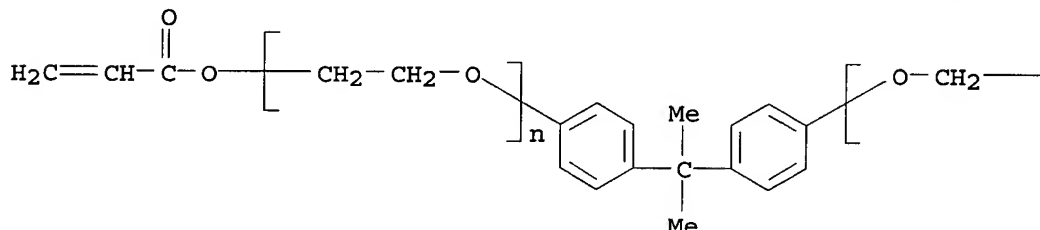
RL: TEM (Technical or engineered material use); USES (Uses)  
(Aronix M 211B; photosensitive resin compns. contg. sol. polyimides,  
(meth)acrylic compds., and fireproofing agents for flame-

retardant dry-film resists)

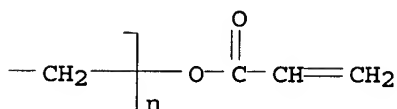
RN 64401-02-1 CAPLUS

CN Poly(oxy-1,2-ethanediyl), .alpha.,.alpha.'-[(1-methylethylidene)di-4,1-phenylene]bis[.omega.-[(1-oxo-2-propenyl)oxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM G03F007-027

ICS C08F290-14; C08G073-10; G03F007-004; G11B005-60; G11B021-21;  
H05K003-00; H05K003-28

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38

ST polyimide methacrylic monomer photoresist phosphorus fireproofing agent;  
dry film resist flame retardant polyimide acrylate compn

IT Magnetic recording heads

(cover-lay film for; photosensitive resin compns. contg. sol.  
polyimides, (meth)acrylic compds., and fireproofing agents for  
flame-retardant dry-film resists)

IT Polysiloxanes, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
use); USES (Uses)

(di-Me, Me Ph, KF 56, fireproofing agent; photosensitive resin compns.  
contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents  
for flame-retardant dry-film resists)

IT Printed circuit boards

(flexible, cover-lay film for; photosensitive resin compns. contg. sol.  
polyimides, (meth)acrylic compds., and fireproofing agents for  
flame-retardant dry-film resists)

IT Polysiloxanes, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
use); USES (Uses)

(hydroxy-contg., KR 211, fireproofing agent; photosensitive resin  
compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing

- agents for flame-retardant dry-film resists)
- IT Fireproofing agents  
(photosensitive resin compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents for flame-retardant dry-film resists)
- IT Polyimides, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(photosensitive resin compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents for flame-retardant dry-film resists)
- IT 64401-02-1, NK Ester A-BPE 30  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Aronix M 211B; photosensitive resin compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents for flame-retardant dry-film resists)
- IT 7347-19-5, BR 31  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(BR 31, fireproofing agent; photosensitive resin compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents for flame-retardant dry-film resists)
- IT 67006-39-7, BR 42M  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(BR 42M, fireproofing agent; photosensitive resin compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents for flame-retardant dry-film resists)
- IT 115-86-6, Triphenyl phosphate 19186-97-1, CR 900  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(fireproofing agent; photosensitive resin compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents for flame-retardant dry-film resists)
- IT 1309-64-4, Antimony trioxide, uses 1314-60-9, Antimony pentoxide 124365-15-7, Sunepoch NA 4800  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(fireproofing aid; photosensitive resin compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents for flame-retardant dry-film resists)
- IT 106-91-2DP, Glycidyl methacrylate, reaction products with diaminobenzoic acid-bisphthalic dianhydride copolymer 155420-78-3P, 3,5-Diaminobenzoic acid-hexafluoroisopropylidene-2,2-diphthalic anhydride copolymer ester with 2-hydroxyethylvinyl ether 156620-45-0P  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(photosensitive resin compns. contg. sol. polyimides, (meth)acrylic compds., and fireproofing agents for flame-retardant dry-film resists)

L25 ANSWER 2 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:199770 CAPLUS

TITLE: Synthesis and characterization of a new  
polyurethane-based photo-alignment layer polymer for

**liquid crystal displays**

AUTHOR(S): Yu, Haifeng; Jiang, Hongzhou; Lian, Yanqing; Wang, Xiaogong; Liu, Deshan

CORPORATE SOURCE: Department of Chemical Engineering, School of Materials Science and Engineering, Tsinghua University, Beijing, 100084, Peop. Rep. China

SOURCE: Gaofenzi Xuebao (2003), (1), 133-138

CODEN: GAXUE9; ISSN: 1000-3304

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB A diol 1,3-di(2-hydroxyethyl) 5-hydroxyl isophthalate (DHHI) was synthesized through the nucleus substitution reaction of 5-hydroxyl isophthalic acid (HIA). The monomer was characterized by <sup>1</sup>H-NMR, FTIR, elemental anal. and differential scanning calorimetry (DSC). Then a precursor polymer (PU-OH) contg. hydroxyl groups was prepd. by step polymn. of DHHI and 4,4'-diphenylmethane diisocyanate (MDI). By PU-OH's functionalization with cinnamoyl chloride, a polyurethane (PU) with cinnamate side-groups (PU-CI) was obtained. The polymers synthesized were characterized with <sup>1</sup>H-NMR, DSC, IR spectroscopy and elemental anal. The **photosensitive** polymer PU-CI was found to be crosslinked under the irradiation of UV light through a cyclo [2 + 2] reaction. After processed by linearly polarized polymn. (LPP), the spin-coating films of PU-CI were changed into photo alignment layers. Then sandwich-type **liq. crystal** cells (LC cells) of a 50-.mu.m-thick were assembled via a capillary action using nematic **liq. crystal** 5CB. The microscopic photographs were obtained which showed the LC-aligning ability of PU-CI photo alignment layers. The **photosensitive** polymer PU-CI synthesized has potential application as photo alignment layer in **liq. crystal** cells.

IT 465512-03-2P 465512-04-3P 533933-31-2P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(synthesis and characterization of polyurethane-based photo-alignment layer polymer for **liq. crystal** displays)

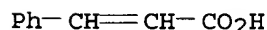
RN 465512-03-2 CAPLUS

CN 1,3-Benzenedicarboxylic acid, 5-hydroxy-, bis(2-hydroxyethyl) ester, polymer with 1,1'-methylenebis[4-isocyanatobenzene], 3-phenyl-2-propenoate (ester) (9CI) (CA INDEX NAME)

CM 1

CRN 621-82-9

CMF C9 H8 O2

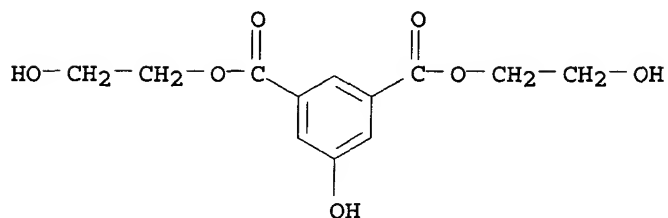


CM 2

CRN 463975-86-2  
 CMF (C15 H10 N2 O2 . C12 H14 O7)x  
 CCI PMS

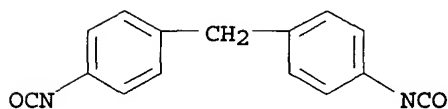
CM 3

CRN 74358-98-8  
 CMF C12 H14 O7



CM 4

CRN 101-68-8  
 CMF C15 H10 N2 O2

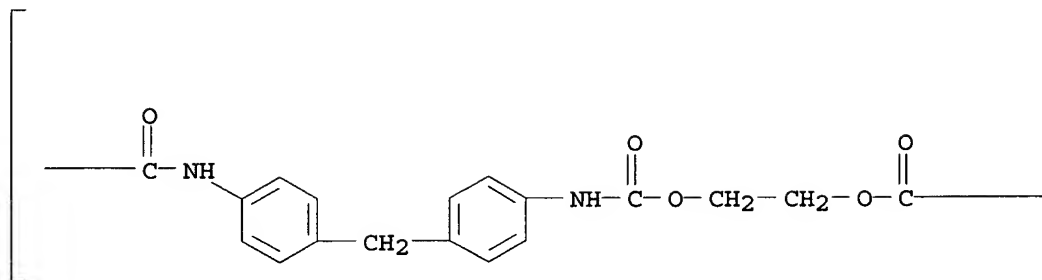


RN 465512-04-3 CAPLUS  
 CN Poly[oxy-1,2-ethanediylloxycarbonyl(5-hydroxy-1,3-phenylene)oxy-1,2-ethanediylloxycarbonylimino-1,4-phenylenemethylene-1,4-phenyleneiminocarbonyl], 3-phenyl-2-propenoate (ester) (9CI) (CA INDEX NAME)

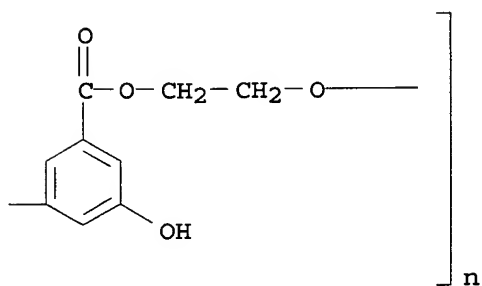
CM 1

CRN 463975-87-3  
 CMF (C27 H24 N2 O9)n  
 CCI PMS

PAGE 1-A



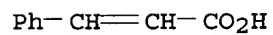
PAGE 1-B



CM 2

CRN 621-82-9

CMF C9 H8 O2



RN 533933-31-2 CAPLUS

CN INDEX NAME NOT YET ASSIGNED

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CRN 465512-03-2

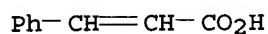
CMF (C15 H10 N2 O2 . C12 H14 O7)x . x C9 H8 O2

CM 2

CRN 621-82-9

CMF C9 H8 O2

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CM 3

CRN 463975-86-2

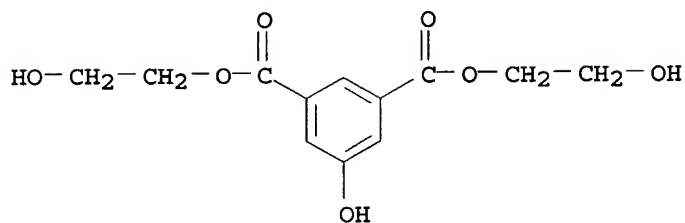
CMF (C15 H10 N2 O2 . C12 H14 O7)x

CCI PMS

CM 4

CRN 74358-98-8

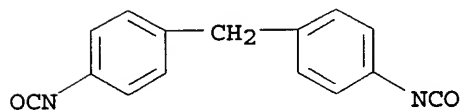
CMF C12 H14 O7



CM 5

CRN 101-68-8

CMF C15 H10 N2 O2



CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37, 74, 75

ST hydroxyethyl hydroxyl isophthalate monomer polyurethane linear polarized  
polymn; liq crystal display polyurethane photo  
alignment layer

IT **Liquid crystals**

(nematic; synthesis and characterization of polyurethane-based  
photo-alignment layer polymer for liq. crystal  
displays)

IT Polymer chains

(orientation; synthesis and characterization of polyurethane-based  
photo-alignment layer polymer for liq. crystal  
displays)

IT Polyurethanes

KOROMA EIC1700

RL: PRP (Properties); SPN (Synthetic preparation); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)

(polyether-; synthesis and characterization of polyurethane-based  
photo-alignment layer polymer for liq. crystal  
displays)

IT Glass transition temperature

Liquid crystal displays

Polymerization

(synthesis and characterization of polyurethane-based photo-alignment  
layer polymer for liq. crystal displays)

IT 40817-08-1, 5CB

RL: TEM (Technical or engineered material use); USES (Uses)

(liq. crystal; synthesis and characterization of  
polyurethane-based photo-alignment layer polymer for liq.  
crystal displays)

IT 74358-98-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)

(monomer; synthesis and characterization of polyurethane-based  
photo-alignment layer polymer for liq. crystal  
displays)

IT 463975-86-2P 463975-87-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)

(precursor; synthesis and characterization of polyurethane-based  
photo-alignment layer polymer for liq. crystal  
displays)

IT 107-07-3, 2-Chloro-1-ethanol 618-83-7, 5-Hydroxyisophthalic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; synthesis and characterization of  
polyurethane-based photo-alignment layer polymer for liq.  
crystal displays)

IT 465512-03-2P 465512-04-3P 533933-31-2P

RL: PRP (Properties); SPN (Synthetic preparation); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)

(synthesis and characterization of polyurethane-based photo-alignment  
layer polymer for liq. crystal displays)

L25 ANSWER 3 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:194613 CAPLUS

DOCUMENT NUMBER: 138:229349

TITLE: Retarder films imparting wide viewing angle to  
displays, their cellulose ester films, their  
manufacture, and polarizing plates and LCD therewith

INVENTOR(S): Fujihana, Kenichiro; Umeda, Hiroki

PATENT ASSIGNEE(S): Konica Co., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

KOROMA EIC1700

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003073485	A2	20030312	JP 2001-270177	20010906
PRIORITY APPLN. INFO.:			JP 2001-270177	20010906

AB Dopes contg. .gtoreq.2 cellulose esters of different acyl substitution degree or having different substituents are cast, dried to residual solvent <100%, and stretched at 110-160.degree. to form films satisfying R1/R0 0.8-2.5 and R0 41-300 nm (R1, R0 = retardation in longitudinal and thickness direction, calcn. formula for R1 and R0 are given). The retarder films, showing minimized curl and good dimensional stability under hot and humid conditions, have the cellulose ester films and stabilized (e.g., polymd.) liq. crystal layers on/above the films.

IT 500899-87-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manuf. of cellulose ester **retarder films** imparting wide viewing angle to liq crystal displays)

RN 500899-87-6 CAPLUS

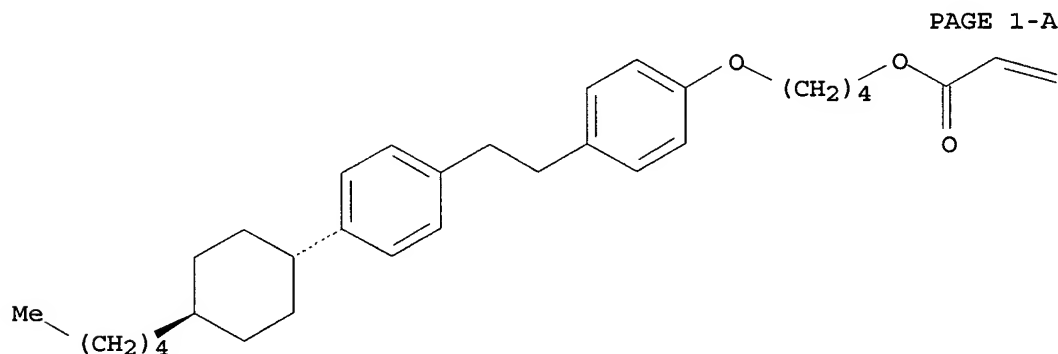
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-[trans-4-[[1-oxo-7-[(1-oxo-2-propenyl)oxy]heptyl]oxy]cyclohexyl]-, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]phenyl ester, polymer with 1,4-butanediyl di-2-propenoate and 4-[4-[2-[4-(trans-4-pentylcyclohexyl)phenyl]ethyl]phenoxy]butyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 500899-86-5

CMF C32 H44 O3

Relative stereochemistry.



PAGE 1-B

= CH2

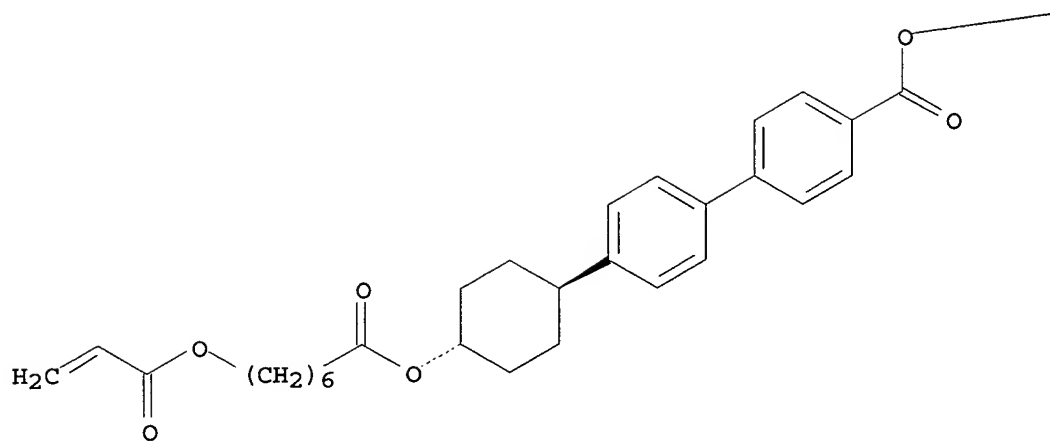
CM 2

CRN 391684-21-2

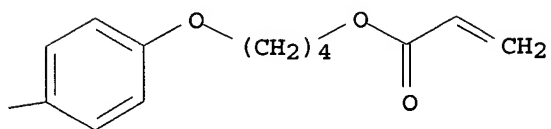
CMF C42 H48 O9

Relative stereochemistry.

PAGE 1-A



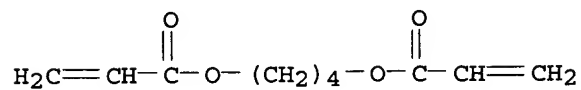
PAGE 1-B



CM 3

CRN 1070-70-8

CMF C10 H14 O4



KOROMA EIC1700

IC ICM C08J005-18  
ICS B29C055-02; G02B005-30; G02F001-1335; G02F001-1336; B29K086-00;  
B29L007-00; C08L001-10

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 43, 73, 75

ST viewing angle widening retarder cellulose ester film; cellulose acetate  
propionate blend film retarder; LCD polarizer retarder film mixed  
cellulose ester

IT Polyesters, preparation  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(acrylic; manuf. of cellulose ester retarder films imparting wide  
viewing angle to liq crystal displays)

IT Casting process  
Liquid crystal displays  
Polarizers  
(manuf. of cellulose ester retarder films imparting wide viewing angle  
to liq crystal displays)

IT Polymer blends  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manuf. of cellulose ester retarder films imparting wide viewing angle  
to liq crystal displays)

IT Liquid crystals, polymeric  
(retarder films; manuf. of cellulose ester retarder films imparting  
wide viewing angle to liq crystal displays)

IT Optical instruments  
(retarders, films; manuf. of cellulose ester retarder films imparting  
wide viewing angle to liq crystal displays)

IT 500899-87-6P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(manuf. of cellulose ester **retarder films** imparting  
wide viewing angle to liq crystal displays)

IT 9004-39-1, Cellulose acetate propionate  
RL: PEP (Physical, engineering or chemical process); PYP (Physical  
process); TEM (Technical or engineered material use); PROC (Process); USES  
(Uses)  
(manuf. of cellulose ester retarder films imparting wide viewing angle  
to liq crystal displays)

IT 9004-35-7, Cellulose acetate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manuf. of cellulose ester retarder films imparting wide viewing angle  
to liq crystal displays)

L25 ANSWER 4 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:36894 CAPLUS

DOCUMENT NUMBER: 138:98299

TITLE: Manufacture of phase-retardation film by orientation  
of polymer coating under irradiation

INVENTOR(S): Sakai, Takeya; Uetsuki, Masao; Kawatsuki, Yoshihiro

PATENT ASSIGNEE(S): Hayashi Telempu Co., Ltd., Japan

KOROMA EIC1700

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003014928	A2	20030115	JP 2001-196011	20010628

PRIORITY APPLN. INFO.: JP 2001-196011 20010628

AB Title process comprises (A) coating photosensitive polymers (and low.-mol.-wt. compds.) on a uniaxial or/and biaxial optically anisotropic layers; and (B) irradiating under light to induce mol. orientation, and, as a result, angle-dependent phase retardation. Thus, 3.75% liq. cryst. homopolymer of CH<sub>2</sub>:CMeCO<sub>2</sub>(CH<sub>2</sub>)<sub>6</sub>O-1,4-C<sub>6</sub>H<sub>4</sub>-1,4-C<sub>6</sub>H<sub>4</sub>O(CH<sub>2</sub>)<sub>2</sub>OCOCH:CHPh and 1.25% CH<sub>2</sub>:CMeCO<sub>2</sub>(CH<sub>2</sub>)<sub>6</sub>O-1,4-C<sub>6</sub>H<sub>4</sub>-1,4-C<sub>6</sub>H<sub>4</sub>O(CH<sub>2</sub>)<sub>6</sub>OCOCMe:CH<sub>2</sub> were dissolved in CH<sub>2</sub>Cl<sub>2</sub> and applied on a polycarbonate film, and irradiated with UV light at different angles to give an optical retardation film.

IT 183234-81-3P  
 RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (intermediate; manuf. of phase-retardation film by orientation of polymer coating under irradiation.)

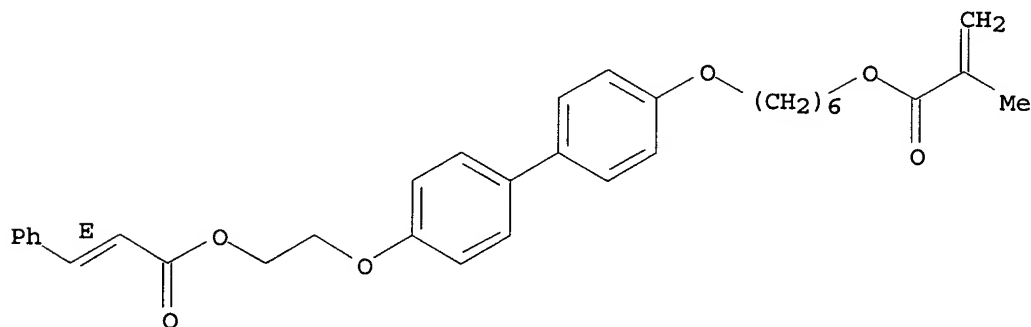
RN 183234-81-3 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-[2-[[[(2E)-1-oxo-3-phenyl-2-propenyl]oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 183234-77-7  
 CMF C33 H36 O6

Double bond geometry as shown.



IT 483370-49-6P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or

engineered material use); PREP (Preparation); USES (Uses)  
(manuf. of phase-retardation film by orientation of  
polymer coating under irradiation.)

RN 483370-49-6 CAPLUS

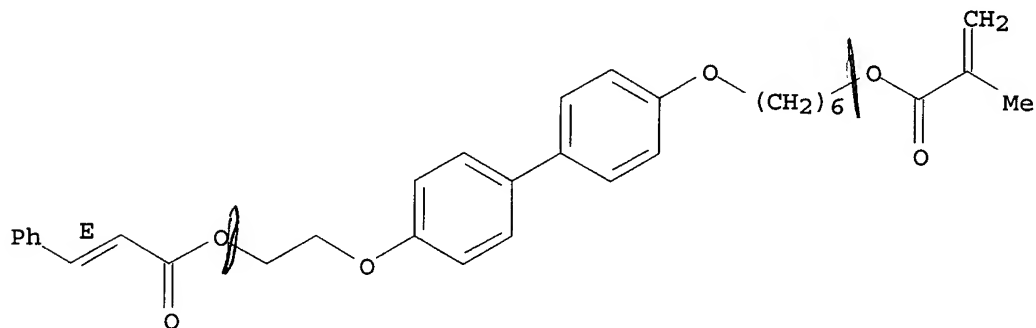
CN 2-Propenoic acid, 2-methyl-, [1,1'-biphenyl]-4,4'-diylbis(oxy-6,1-hexanediyl) ester, polymer with 6-[[4'-[2-[[[(2E)-1-oxo-3-phenyl-2-propenyl]oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 183234-77-7

CMF C33 H36 O6

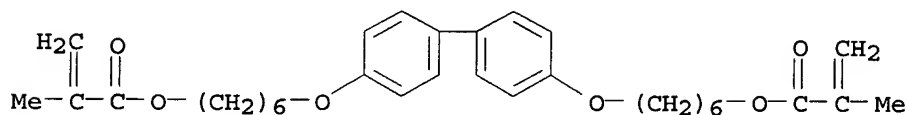
Double bond geometry as shown.



CM 2

CRN 126757-88-8

CMF C32 H42 O6



IC ICM G02B005-30

ICS C08J007-00; G02F001-1336; C08L101-00

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 42

ST liq cryst polymer mol orientation UV irradiation retardation film;  
polycarbonate substrate photosensitive coating mol orientation phase  
retardation film

IT Coating materials

(light-sensitive; manuf. of phase-retardation film by orientation of

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polymer coating under irradiation.)

IT Liquid crystal displays  
Liquid crystals, polymeric  
(manufacture of phase-retardation film by orientation of polymer coating under irradiation.)

IT Optical films  
(phase retardation; manufacture of phase-retardation film by orientation of polymer coating under irradiation.)

IT Optical instruments  
(retarders, phase-, film; manufacture of phase-retardation film by orientation of polymer coating under irradiation.)

IT Polycarbonates, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(substrate; manufacture of phase-retardation film by orientation of polymer coating under irradiation.)

IT 183234-81-3P  
RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(intermediate; manufacture of phase-retardation film by orientation of polymer coating under irradiation.)

IT 126757-88-8P  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(intermediate; manufacture of phase-retardation film by orientation of polymer coating under irradiation.)

IT 483370-49-6P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(manufacture of phase-retardation film by orientation of polymer coating under irradiation.)

L25 ANSWER 5 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:976065 CAPLUS  
DOCUMENT NUMBER: 138:47435  
TITLE: Composite optical retardation film, circularly polarizing film, and liquid-crystal display and organic electroluminescent display device using them  
INVENTOR(S): Yoshimi, Hiroyuki  
PATENT ASSIGNEE(S): Nitto Denko Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002372623	A2	20021226	JP 2001-179941	20010614
PRIORITY APPLN. INFO.:			JP 2001-179941	20010614

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AB The optical retardation film has a  $\lambda/4$  birefringence layer and  $\lambda/2$  birefringence layer on a  $\lambda/4$  or  $\lambda/2$  transparent drawn polymer film. The birefringence layers comprise liq.-crystal compds. The circularly polarizing film is a laminate of the optical retardation film and a polarizing film. Liq.-crystal displays and org. electroluminescent display devices using the optical retardation film or circularly polarizing film are also claimed. The optical films provide  $1/4$  phase shifts in wide wavelength range, and the liq.-crystal displays have wide view angles and the electroluminescent display devices produce clear images without light reflection.

IT 279256-64-3P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(birefringence layers; composite optical retardation film and circularly polarizing film for liq.-crystal display and org. electroluminescent display device)

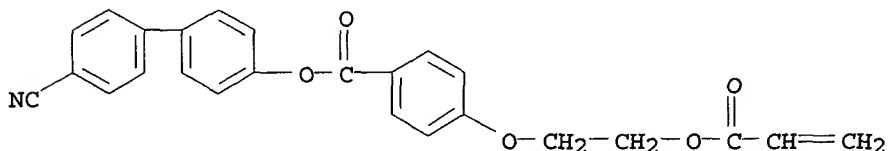
RN 279256-64-3 CAPLUS

CN Benzoic acid, 4-[2-[(1-oxo-2-propenyl)oxy]ethoxy]-, 4'-cyano[1,1'-biphenyl]-4-yl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 133945-18-3

CMF C25 H19 N O5



IC ICM G02B005-30

ICS G02F001-1335; G02F001-1336; G09F009-00

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 73

ST composite optical retardation film liq crystal birefringence layer; liq crystal display wide view angle optical retarder; circularly polarizing film liq crystal birefringence layer; antireflective film org electroluminescent display

IT Antireflective films

Liquid crystal displays

Polarizing films

(composite optical retardation film and circularly polarizing film for liq.-crystal display and org. electroluminescent display device)

IT Electroluminescent devices

(displays; composite optical retardation film and circularly polarizing film for liq.-crystal display and org. electroluminescent display device)

IT Luminescent screens

(electroluminescent; composite optical retardation film and circularly polarizing film for liq.-crystal display and org. electroluminescent display device)

IT Optical instruments  
(retarders, films; composite optical retardation film and circularly polarizing film for liq.-crystal display and org. electroluminescent display device)

IT 279256-64-3P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(birefringence layers; composite optical **retardation film** and circularly polarizing **film** for liq.-crystal display and org. electroluminescent display device)

IT 478687-17-1, SEG 1425DU  
RL: TEM (Technical or engineered material use); USES (Uses)  
(polarizing film; composite optical retardation film and circularly polarizing film for liq.-crystal display and org. electroluminescent display device)

IT 25038-76-0, Norbornene homopolymer  
RL: TEM (Technical or engineered material use); USES (Uses)  
(substrate; composite optical retardation film and circularly polarizing film for liq.-crystal display and org. electroluminescent display device)

L25 ANSWER 6 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:944764 CAPLUS  
DOCUMENT NUMBER: 138:31097  
TITLE: Polymer film and its use in display device substrate  
INVENTOR(S): Matsuda, Yutaka; Tanaka, Junji; Umeta, Hideo  
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002356566	A2	20021213	JP 2001-239761	20010807
PRIORITY APPLN. INFO.:			JP 2000-239661	A 20000808
			JP 2000-365753	A 20001130
			JP 2001-15882	A 20010124
			JP 2001-35760	A 20010213
			JP 2001-95605	A 20010329

AB The film has retardation within viewing angle 50.degree. .ltoreq.5 nm and is used in the substrate of the device preferably using TFT. The film may be prepd. by heat treatment of crosslinked polymers contg. (meth)acryloyl groups. The film with high resistance to DMSO, tetramethylammonium hydroxide, and liq. crystals, is esp. suitable for active matrix liq. crystal displays and also for optical disks, optical waveguides, etc.

IT 246858-42-4P 462058-65-7P 462109-11-1P

**478243-08-2P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic polymer **film** with controlled **retardation**  
for liq. crystal display substrate)

RN 246858-42-4 CAPLUS

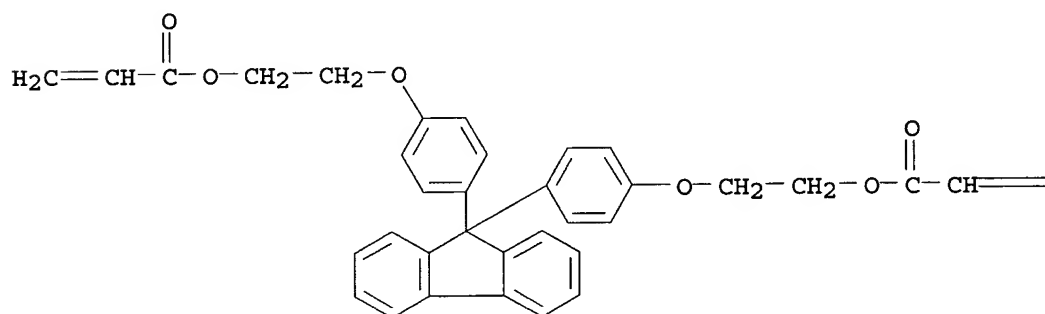
CN 2-Propenoic acid, 9H-fluoren-9-ylidenebis(4,1-phenyleneoxy-2,1-ethanediyl)  
ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 161182-73-6

CMF C35 H30 O6

PAGE 1-A



PAGE 1-B

=CH<sub>2</sub>

RN 462058-65-7 CAPLUS

CN 2-Propenoic acid, thiobis(4,1-phenyleneoxy-2,1-ethanediyl) ester,  
homopolymer (9CI) (CA INDEX NAME)

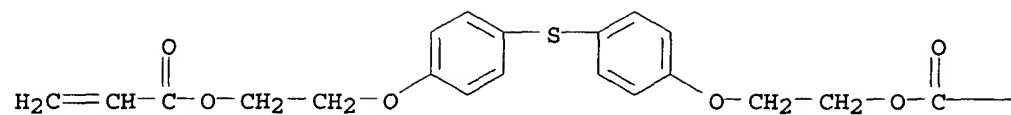
CM 1

CRN 462058-64-6

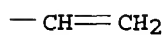
CMF C22 H22 O6 S

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PAGE 1-A



PAGE 1-B



RN 462109-11-1 CAPLUS

CN 2-Propenoic acid, 9H-fluoren-9-ylidenebis[4,1-phenyleneoxy(methyl-2,1-ethanediyl)] ester, homopolymer (9CI) (CA INDEX NAME)

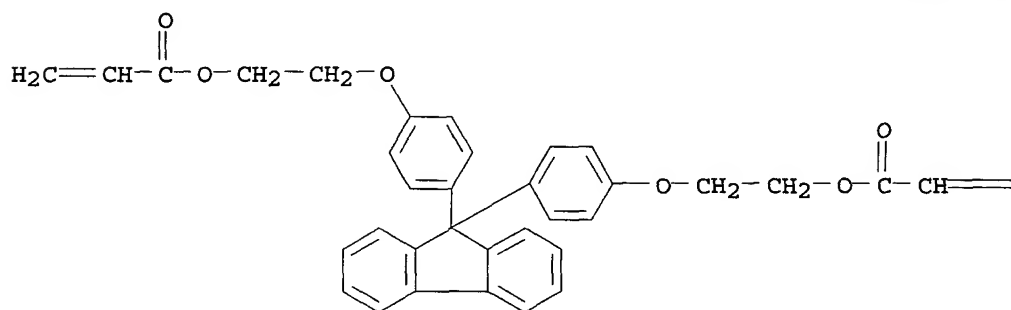
CM 1

CRN 478245-10-2

CMF C37 H34 O6

CCI IDS

PAGE 1-A



2 ( D1-Me )

PAGE 1-B

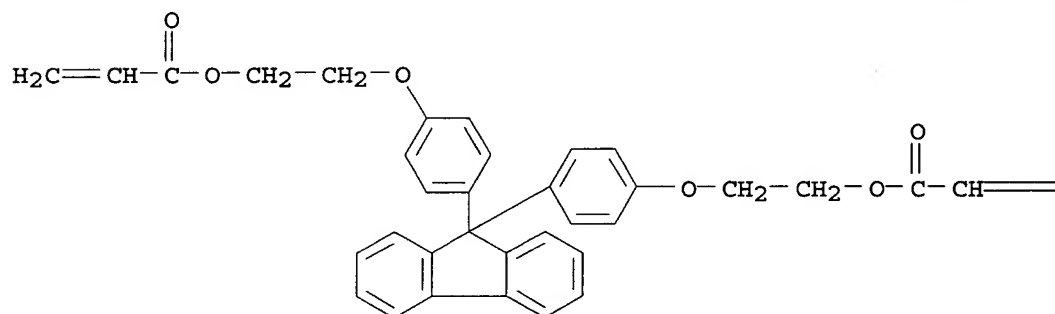
=CH<sub>2</sub>

RN 478243-08-2 CAPLUS  
 CN 2-Propenoic acid, 9H-fluoren-9-ylidenebis(4,1-phenyleneoxy-2,1-ethanediyl)  
 ester, polymer with (octahydro-4,7-methano-1H-indene-5,?-  
 diyl)bis(methylene) di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 161182-73-6  
 CMF C35 H30 O6

PAGE 1-A



PAGE 1-B

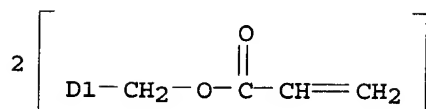
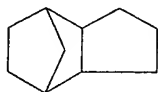
=CH<sub>2</sub>

CM 2

CRN 42594-17-2  
 CMF C18 H24 O4

KOROMA EIC1700

CCI IDS



IC ICM C08J005-18  
ICS C08F020-10; G02F001-1333; C08L033-06

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38

ST acrylic polymer film retardation control TFT LCD

IT Liquid crystal displays  
Optical films  
Plastic films  
(acrylic polymer film with controlled retardation for liq. crystal display substrate)

IT Thin film transistors  
(display device with; acrylic polymer film with controlled retardation for liq. crystal display substrate)

IT Crosslinking  
Heat treatment  
(film obtained by; acrylic polymer film with controlled retardation for liq. crystal display substrate)

IT 71512-49-7P 100844-80-2P 106831-85-0P 116321-27-8P 147073-77-6P  
149697-88-1P 149697-92-7P **246858-42-4P** 462058-60-2P  
**462058-65-7P** **462109-11-1P** 465539-38-2P 478242-99-8P  
478243-00-4P 478243-01-5P 478243-02-6P 478243-03-7P 478243-05-9P  
478243-07-1P **478243-08-2P**  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic polymer **film** with controlled **retardation** for liq. crystal display substrate)

L25 ANSWER 7 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:900889 CAPLUS

DOCUMENT NUMBER: 137:391153

TITLE: Optically active polyesters and their photoreactive chiral agents, **liquid crystal** compositions, photoinduced change or fixation of helical structures of **liquid crystals** in the compositions, and their uses

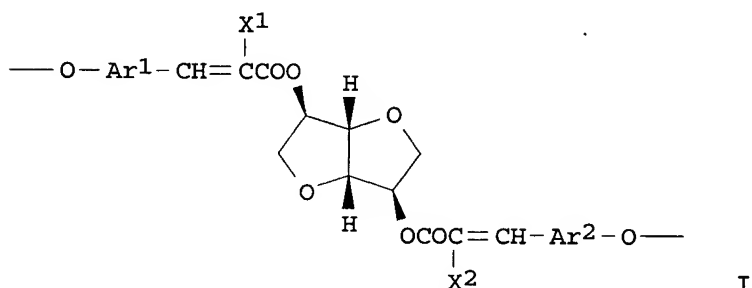
INVENTOR(S): Yumoto, Masatoshi; Ichihashi, Mitsuyoshi; Kawabata,

KOROMA EIC1700

Koya  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 46 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002338668	A2	20021127	JP 2001-144532	20010515
US 2003111639	A1	20030619	US 2002-143876	20020514
PRIORITY APPLN. INFO.:			JP 2001-144532 A	20010515

GI



AB The optically active polyesters for chiral agents having high resolu. are composed of structure units of isosorbides I (Ar1, Ar2 = divalent arom. or heteroarom. group; X1, X2 = H, electron-withdrawing group), C(O)AC(O) (A = divalent substituent), and optionally OBO (B = divalent substituent).

**Liq. cryst.** compns. contain at least **liq.**

**cryst.** compds. and the optically active polyesters. In another alternative, the **liq. cryst.** compns. contain

**liq. cryst.** compds. bearing .gtoreq.1 polymerizable groups, .gtoreq.1 of the polyesters, and photopolymn. photopolymn.

initiators. For changing helical structures of **liq.**

**crystals**, the compns. are irradiated with light to change the structure of the polyesters. For fixation of helical structures of

**liq. crystals**, the compns. are imagewisely irradiated

with light of wavelength the polyesters are sensitive to, followed with irradiating with light of wavelength the photopolymn. initiators are

sensitive to. **Liq. cryst.** color filters, optical

filters, and recording media contg. **liq. cryst.**

compds. and .gtoreq.1 of the polyesters are also claimed.

IT 476364-64-4P 476364-65-5P 476364-66-6P

476364-67-7P 476364-69-9P 476364-70-2P

476364-71-3P 476364-72-4P 476364-73-5P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(optically active isosorbide polyesters as photoreactive chiral agents,  
their liq. crystal compns., and their use)

RN 476364-64-4 CAPLUS

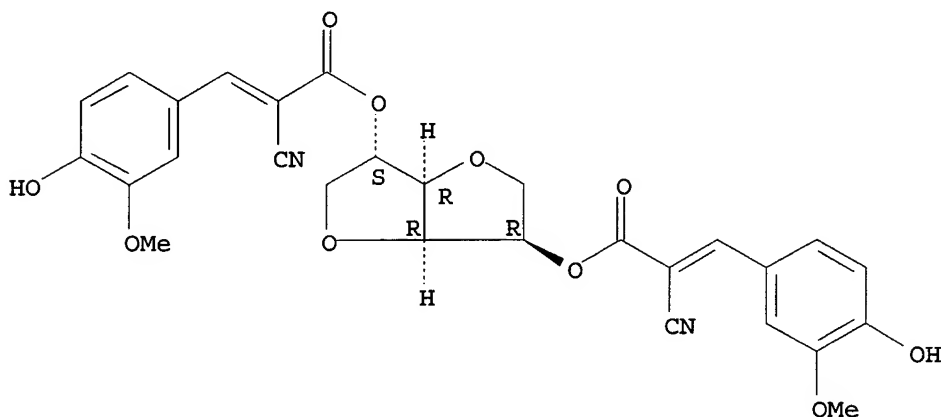
CN D-Glucitol, 1,4:3,6-dianhydro-, bis[2-cyano-3-(4-hydroxy-3-methoxyphenyl)-  
2-propenoate], polymer with 1,4-benzenedicarbonyl dichloride (9CI) (CA  
INDEX NAME)

CM 1

CRN 476364-63-3

CMF C28 H24 N2 O10

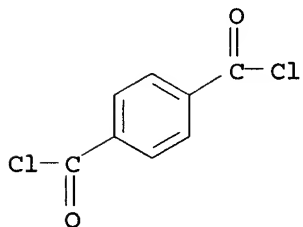
Absolute stereochemistry.  
Double bond geometry unknown.



CM 2

CRN 100-20-9

CMF C8 H4 Cl2 O2



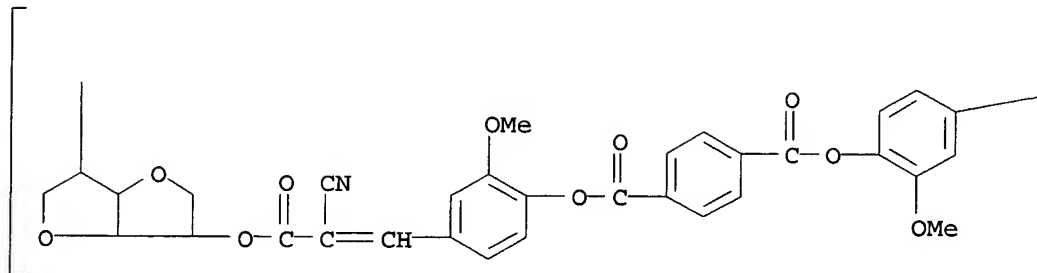
RN 476364-65-5 CAPLUS

CN Poly[(2.xi.,5.xi.)-1,4:3,6-dianhydro-2,5-dideoxy-D-threo-hexitol-2,5-  
diyl]oxy(2-cyano-1-oxo-2-propene-1,3-diyl)(3-methoxy-1,4-  
phenylene)oxycarbonyl-1,4-phenylenecarbonyloxy(2-methoxy-1,4-phenylene)(2-

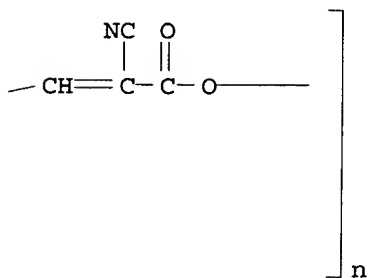
KOROMA EIC1700

cyano-3-oxo-1-propene-1,3-diyl)oxy] (9CI) (CA INDEX NAME)

PAGE 1-A



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RN 476364-66-6 CAPLUS

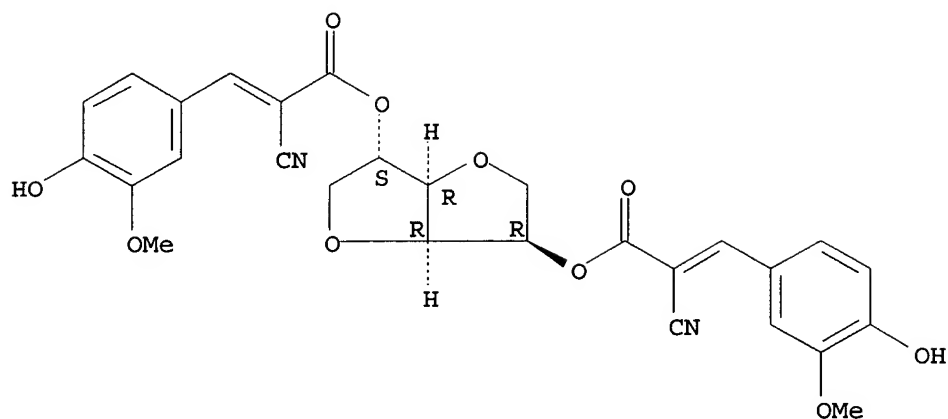
CN D-Glucitol, 1,4:3,6-dianhydro-, bis[2-cyano-3-(4-hydroxy-3-methoxyphenyl)-2-propenoate], polymer with 4,4'-[1,12-dodecanediylbis(oxy)]bis[benzoyl chloride] (9CI) (CA INDEX NAME)

CM 1

CRN 476364-63-3

CMF C28 H24 N2 O10

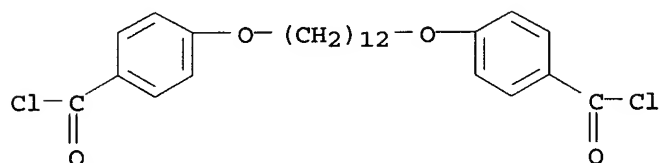
Absolute stereochemistry.  
Double bond geometry unknown.



CM 2

CRN 40873-07-2

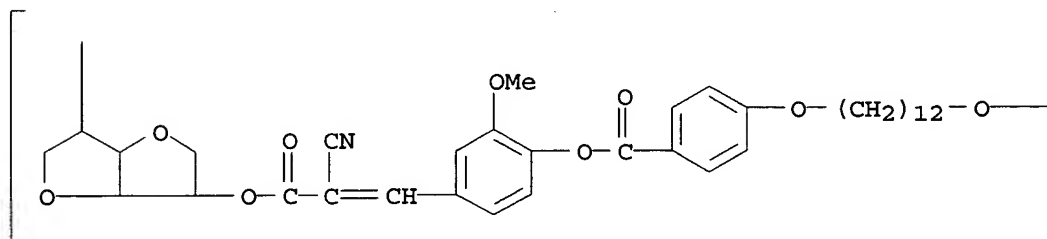
CMF C26 H32 C12 O4



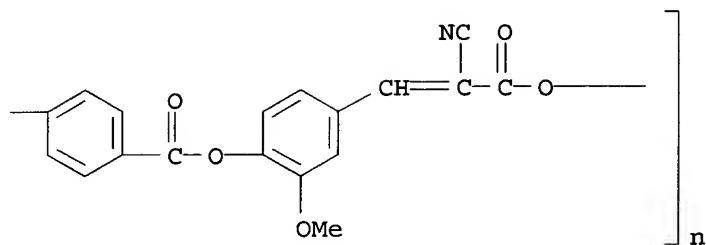
RN 476364-67-7 CAPLUS

CN Poly[(2,xi.,5.xi.)-1,4:3,6-dianhydro-2,5-dideoxy-D-threo-hexitol-2,5-diyl]oxy(2-cyano-1-oxo-2-propene-1,3-diyl)(3-methoxy-1,4-phenylene)oxycarbonyl-1,4-phenyleneoxy-1,12-dodecanediylloxy-1,4-phenylenecarbonyloxy(2-methoxy-1,4-phenylene)(2-cyano-3-oxo-1-propene-1,3-diyl)oxy] (9CI) (CA INDEX NAME)

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KOROMA EIC1700



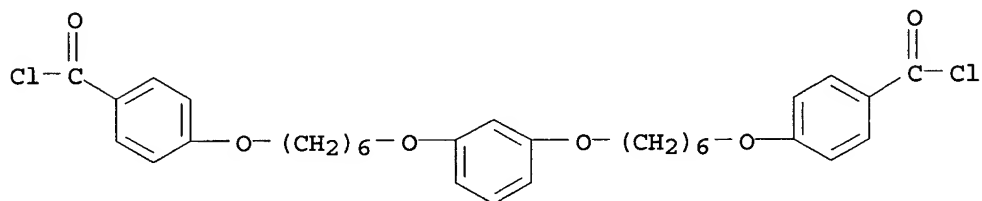
RN 476364-69-9 CAPLUS

CN D-Glucitol, 1,4:3,6-dianhydro-, bis[2-cyano-3-(4-hydroxy-3-methoxyphenyl)-2-propenoate], polymer with 4,4'-[1,3-phenylenebis(oxy-6,1-hexanediylloxy)]bis[benzoyl chloride] (9CI) (CA INDEX NAME)

CM 1

CRN 476364-68-8

CMF C32 H36 Cl2 O6

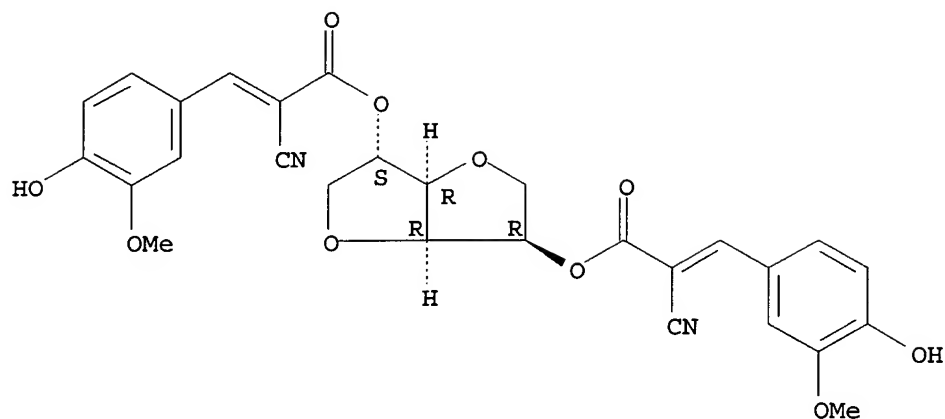


CM 2

CRN 476364-63-3

CMF C28 H24 N2 O10

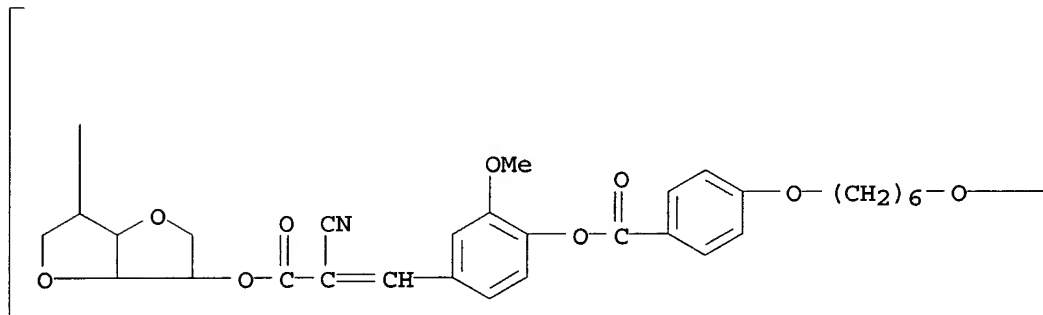
Absolute stereochemistry.  
Double bond geometry unknown.



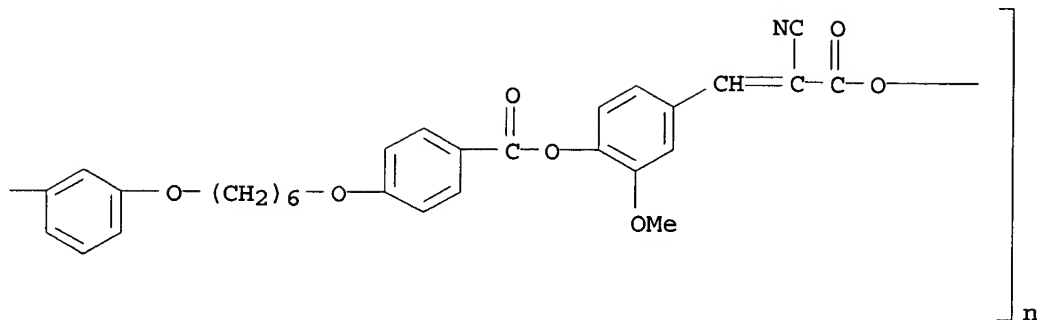
RN 476364-70-2 CAPLUS

CN Poly[[ (2.xi., 5.xi.) -1,4:3,6-dianhydro-2,5-dideoxy-D-threo-hexitol-2,5-diyl]oxy(2-cyano-1-oxo-2-propene-1,3-diyl) (3-methoxy-1,4-phenylene) oxycarbonyl-1,4-phenyleneoxy-1,6-hexanediyl-1,3-phenyleneoxy-1,6-hexanediyl-1,4-phenyleneoxycarbonyl-1,4-phenyleneoxy(2-methoxy-1,4-phenylene) (2-cyano-3-oxo-1-propene-1,3-diyl)oxy] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 476364-71-3 CAPLUS

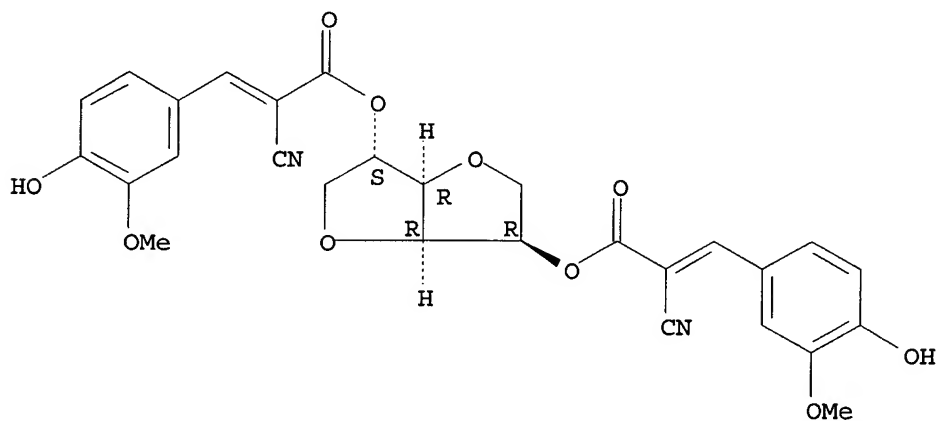
CN D-Glucitol, 1,4:3,6-dianhydro-, bis[2-cyano-3-(4-hydroxy-3-methoxyphenyl)-2-propenoate], polymer with 4,4'-[oxybis(2,1-ethanediylloxy)]bis[benzoyl chloride] (9CI) (CA INDEX NAME)

CM 1

CRN 476364-63-3

CMF C28 H24 N2 O10

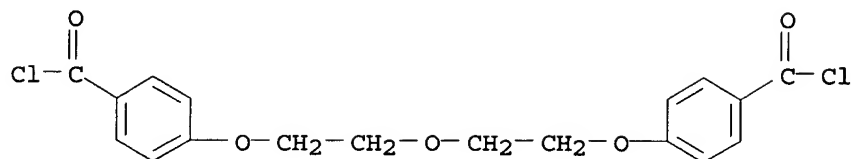
Absolute stereochemistry.  
Double bond geometry unknown.



CM 2

CRN 103747-13-3

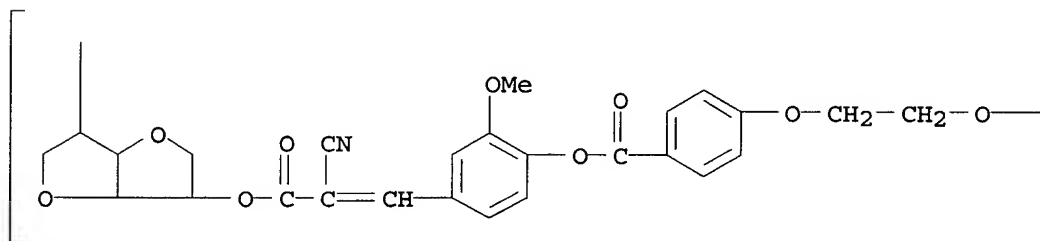
CMF C18 H16 C12 O5



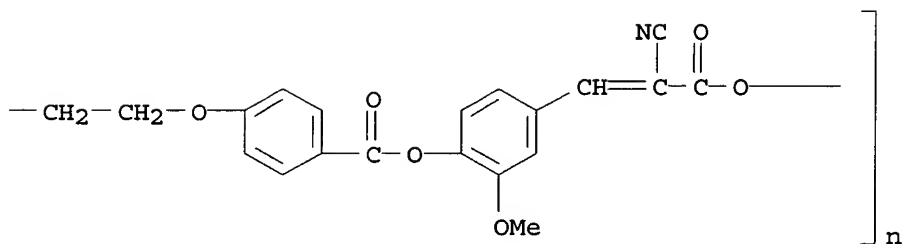
RN 476364-72-4 CAPLUS

CN Poly[[ (2.xi., 5.xi.) -1,4:3,6-dianhydro-2,5-dideoxy-D-threo-hexitol-2,5-diyl]oxy (2-cyano-1-oxo-2-propene-1,3-diyl) (3-methoxy-1,4-phenylene) oxycarbonyl-1,4-phenyleneoxy-1,2-ethanediyl-1,2-ethanediyl-1,4-phenylenecarbonyloxy (2-methoxy-1,4-phenylene) (2-cyano-3-oxo-1-propene-1,3-diyl)oxy] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 476364-73-5 CAPLUS

CN D-Glucitol, 1,4:3,6-dianhydro-, bis[2-cyano-3-(4-hydroxy-3-methoxyphenyl)-2-propenoate], polymer with 1,4-benzenedicarbonyl dichloride and 2-methyl-1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

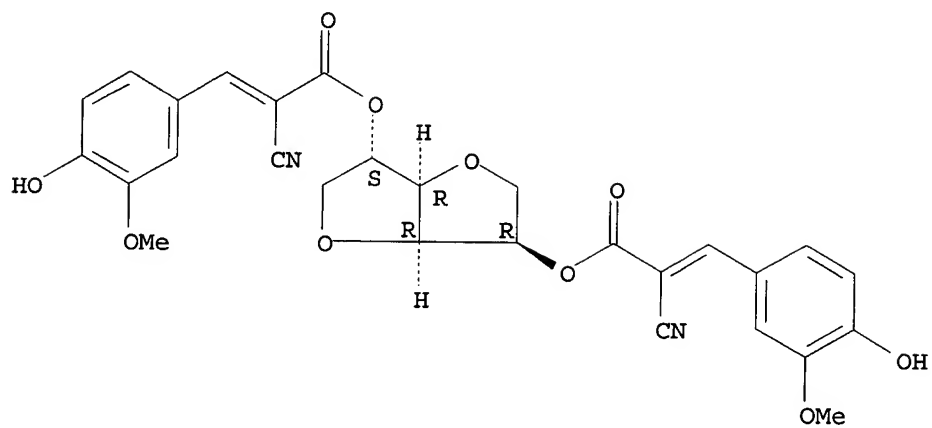
CRN 476364-63-3

CMF C28 H24 N2 O10

Absolute stereochemistry.

KOROMA EIC1700

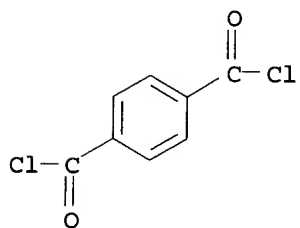
Double bond geometry unknown.



CM 2

CRN 100-20-9

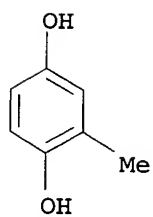
CMF C8 H4 Cl2 O2



CM 3

CRN 95-71-6

CMF C7 H8 O2



IC ICM C08G063-52

KOROMA EIC1700

ICS C08F283-01; G02B005-20; G02B005-26; G02F001-13

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST optically active isosorbide polyester chiral agent; **liq crystal** optically active isosorbide polyester; cholesteric **liq crystal** optically active isosorbide polyester; nematic **liq crystal** optically active isosorbide polyester; color filter optically active isosorbide polyester; optical **film** optically active isosorbide polyester; isosorbide polyester optical recording medium; unsatd isosorbide polyester chiral agent

IT Optical reflectors  
(circularly polarized; optically active isosorbide polyesters as photoreactive chiral agents, their **liq. crystal** compns., and their use as)

IT **Liquid crystal** displays  
**Liquid crystals**  
Optical filters  
Optical recording materials  
(optically active isosorbide polyesters as photoreactive chiral agents, their **liq. crystal** compns., and their use as)

IT Polyethers, preparation  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
(polyester-, unsatd.; optically active isosorbide polyesters as photoreactive chiral agents, their **liq. crystal** compns., and their use)

IT Polyesters, preparation  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
(polyether-, unsatd.; optically active isosorbide polyesters as photoreactive chiral agents, their **liq. crystal** compns., and their use)

IT Optical instruments  
(retarders; optically active isosorbide polyesters as photoreactive chiral agents, their **liq. crystal** compns., and their use as)

IT Polyesters, preparation  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
(unsatd., isosorbide-based; optically active isosorbide polyesters as photoreactive chiral agents, their **liq. crystal** compns., and their use)

IT 66230-67-9, ZLI 1132  
RL: TEM (Technical or engineered material use); **USES (Uses)**  
(optically active isosorbide polyesters as photoreactive chiral agents, their **liq. crystal** compns. contg.)

IT **476364-64-4P 476364-65-5P 476364-66-6P**  
**476364-67-7P 476364-69-9P 476364-70-2P**  
**476364-71-3P 476364-72-4P 476364-73-5P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
(optically active isosorbide polyesters as photoreactive chiral agents,

their liq. crystal compns., and their use)

IT 3712-60-5 31701-42-5 132694-65-6 250230-59-2 339588-79-3  
360076-77-3

RL: TEM (Technical or engineered material use); USES (Uses)  
(photosensitive compn. contg.; optically active isosorbide  
polyesters as photoreactive chiral agents, their liq.  
crystal compns., and their use)

L25 ANSWER 8 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:867199 CAPLUS

DOCUMENT NUMBER: 137:360152

TITLE: Low-cost manufacture of optical films  
containing liquid crystals and  
films showing selective light reflection

INVENTOR(S): Ichihashi, Mitsuyoshi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002328229	A2	20021115	JP 2001-134058	20010501
PRIORITY APPLN. INFO.:			JP 2001-134058	20010501

AB Compns. contg. liq. crystal compds. having .gtoreq.1  
polymerizable group(s) and polymn. initiators are kept at a temp. for  
forming liq. crystal phase, polymd. by irradiation of  
light under .ltoreq.80.degree., and then heat-cured to give optical  
films. Films showing selective light reflection are  
obtained by using nematic liq. crystal compns. contg.  
chiral agents (e.g. photoreactive chiral agents), using liq.  
crystal compns. contg. agents for orientation of free surface, or  
by repeating the photo- and heat-curing process. Color filters, optical  
retardation films, etc. can be obtained.

IT 401660-99-9P

RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)

(liq. crystal; manuf. of optical films  
contg. liq. crystal polymers and selective light  
reflection films)

RN 401660-99-9 CAPLUS

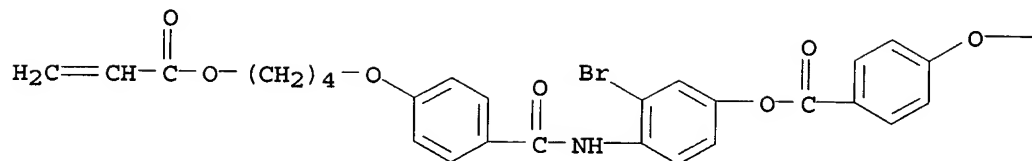
CN Benzoic acid, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]-, 3-bromo-4-[[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoyl]amino]phenyl ester, homopolymer (9CI)  
(CA INDEX NAME)

CM 1

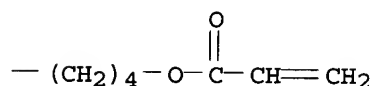
CRN 360076-77-3

CMF C34 H34 Br N O9

PAGE 1-A



PAGE 1-B



- IC ICM G02B005-30
- ICS G02B005-20; G02B005-26; G02F001-13; G02F001-1335; G02F001-1336
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- Section cross-reference(s): 38, 74, 75
- ST **liq crystal** polymer optical film; selective light reflection **liq crystal** polymer
- IT **Liquid crystals**, polymeric
- Optical films
- Optical filters
- (manuf. of optical films contg. liq. crystal polymers and selective light reflection films)
- IT **Liquid crystals**
- (nematic; manuf. of optical films contg. liq. crystal polymers and selective light reflection films)
- IT Optical instruments
- (retarders; manuf. of optical films contg. liq. crystal polymers and selective light reflection films)
- IT Optical reflectors
- (selective; manuf. of optical films contg. liq. crystal polymers and selective light reflection films)
- IT 381233-68-7
- RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
- (free surface orientation agent; manuf. of optical films contg. liq. crystal polymers and selective light reflection films)
- IT 401660-99-9P
- RL: IMF (Industrial manufacture); TEM (Technical or engineered

material use); PREP (Preparation); USES (Uses)  
 (liq. crystal; manuf. of optical films  
 contg. liq. crystal polymers and selective light  
 reflection films)

IT 474792-98-8

RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
 use); USES (Uses)  
 (photosensitive chiral agent; manuf. of optical films  
 contg. liq. crystal polymers and selective light  
 reflection films)

L25 ANSWER 9 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:792333 CAPLUS

DOCUMENT NUMBER: 137:311951

TITLE: Method for manufacture of cellulose acetate optical  
 retardation film and polarizing plate

INVENTOR(S): Ito, Yoji

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002302561	A2	20021018	JP 2001-107436	20010405
PRIORITY APPLN. INFO.:			JP 2001-107436	20010405

AB The film-manufg. method includes forming a protective layer on one side of  
 a cellulose acetate film, saponif. the film, forming an alignment layer on  
 the saponif. side, and applying an optically anisotropic layer comprising a  
 liq. cryst. compd. The film and plate prevent large-sized liq. crystal  
 displays from light leakage and irregular brightness. Thus, a optical  
 retardation sheet comprised sequential layers of SAT 106TS (protective  
 film), a cellulose acetate film, an alignment layer contg. vinyl  
 alc.-vinyl 4-(4-acryloyloxybutoxy)benzoate-vinyl acetate-glutaraldehyde  
 copolymer, and an optically anisotropic layer contg. discotic liq. cryst.  
 2,3,6,7,10,11-hexa(4-acryloyloxybutoxyphenylcarbonyloxy)triphenylene-V 360  
 [trimethylolpropane tris[2-(acryloyloxy)ethyl] ether] copolymer, AB  
 551-0.2 (cellulose acetate butyrate), and CAB 531-1 (cellulose acetate  
 butyrate) showed retardation 43 nm at 546 nm.

IT 401624-10-0P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (optically anisotropic layers; manuf. of cellulose acetate optical  
 retardation film for polarizing plate)

RN 401624-10-0 CAPLUS

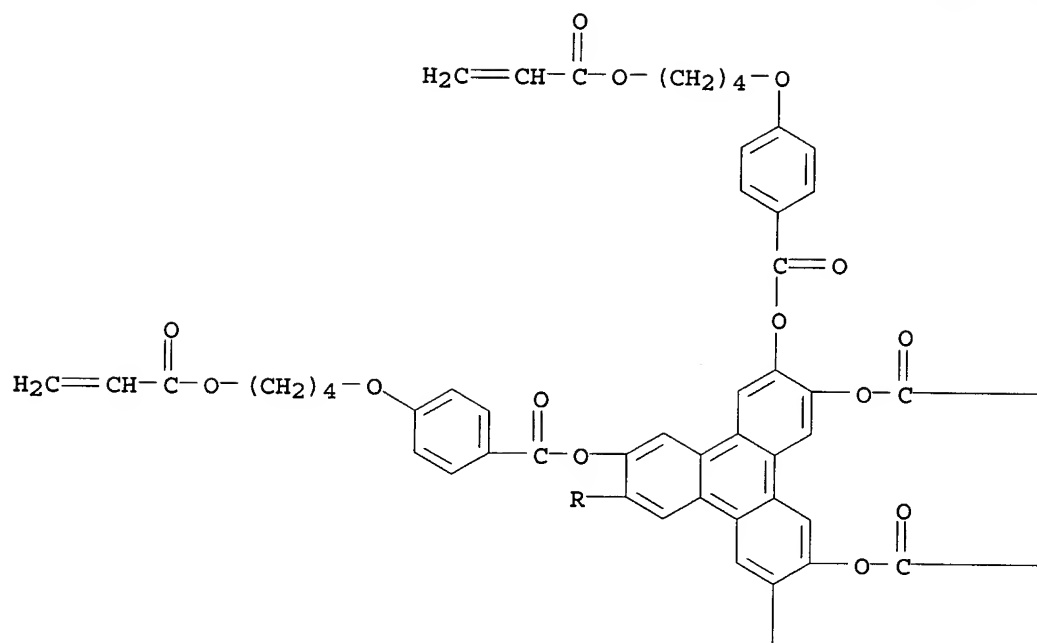
CN Benzoic acid, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]-, 2,3,6,7,10,11-  
 triphenylenehexayl ester, polymer with [2-ethyl-2-[[2-[(1-  
 oxopropenyl)oxy]ethoxy]methyl]-1,3-propanediyl]bis(oxy-1,2-ethanediyl)  
 di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

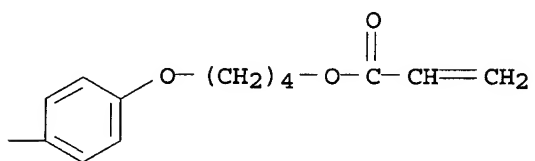
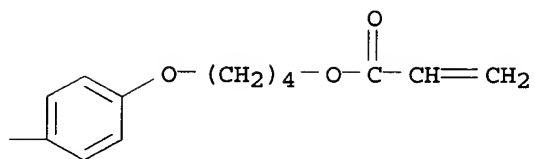
CRN 174079-42-6

CMF C102 H96 O30

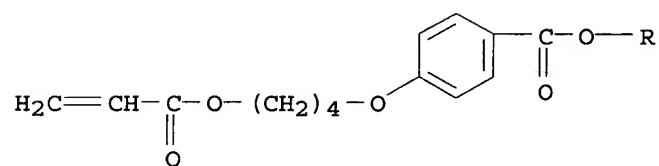
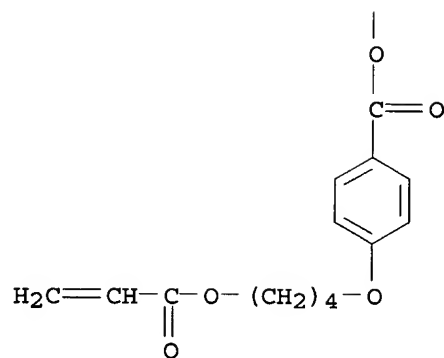
PAGE 1-A



PAGE 1-B



PAGE 2-A

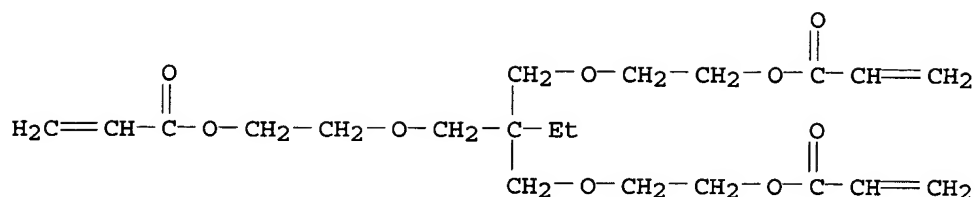


CM 2

CRN 75577-70-7

CMF C21 H32 O9

KOROMA EIC1700



IC C08J007-00  
ICS C08J005-12; C08J007-04; G02B005-30; G02F001-1335; G02F001-1336;  
C08L001-12

CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 73, 74, 75

ST sapond cellulose acetate optical retardation film; liq crystal display  
polarizing plate cellulose acetate; acryloyloxybutoxyphenylcarbonyoxy  
triphenylene discotic liq crystal optical retardation film; modified  
polyvinyl alc liq crystal alignment optical retarder

IT Polyimides, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(alignment layers; manuf. of cellulose acetate optical retardation film  
for polarizing plate)

IT Liquid crystals  
(discotic; manuf. of cellulose acetate optical retardation film for  
polarizing plate)

IT Polarizing films  
(manuf. of cellulose acetate optical retardation film for polarizing  
plate)

IT Liquid crystal displays  
(manuf. of cellulose acetate optical retardation film for polarizing  
plate for)

IT Optical instruments  
(retarders; manuf. of cellulose acetate optical retardation film for  
polarizing plate)

IT 211913-71-2P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(crosslinked, alignment layers; manuf. of cellulose acetate optical  
retardation film for polarizing plate)

IT 9012-09-3, Cellulose triacetate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(films; manuf. of cellulose acetate optical retardation film for  
polarizing plate)

IT 9004-35-7DP, Cellulose acetate, sapond.  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(manuf. of cellulose acetate optical retardation film for polarizing  
plate)

IT 9004-36-8, Cellulose, acetate butanoate  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material

use); USES (Uses)

(manuf. of cellulose acetate optical retardation film for polarizing plate)

IT 66230-67-9, ZLI 1132 361146-23-8, Fujitac TD 80UF

RL: TEM (Technical or engineered material use); USES (Uses)

(manuf. of cellulose acetate optical retardation film for polarizing plate)

IT 401624-10-0P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (optically anisotropic layers; manuf. of cellulose acetate optical retardation film for polarizing plate)

IT 9002-89-5, Vinyl alcohol homopolymer

RL: TEM (Technical or engineered material use); USES (Uses)

(polarizing films; manuf. of cellulose acetate optical retardation film for polarizing plate)

IT 25038-59-9, SAT 106TS, uses

RL: NUU (Other use, unclassified); USES (Uses)

(protective film; manuf. of cellulose acetate optical retardation film for polarizing plate)

L25 ANSWER 10 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:709178 CAPLUS

DOCUMENT NUMBER: 137:255460

TITLE: Stretched or unstretched cellulose ester film, optical retarder, optical compensator sheet, polarizer, and liquid crystal display

INVENTOR(S): Murayama, Masahiko

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002267846	A2	20020918	JP 2001-72390	20010314
PRIORITY APPLN. INFO.:			JP 2001-72390	20010314

AB The stretched film has breaking elongation in vertical direction to max.-stretched direction 40-110%. The unstretched film satisfied breaking elongation in a certain direction 40-110%. The film may contain polyester-polyurethanes and/or arom. compds. having .gtoreq.2 arom. rings. The retarder consists of the stretched cellulose ester film alone. The compensator sheet consists of the stretched cellulose ester film and optionally optically anisotropic liq. crystal compd. layer. The polarizer uses a polarizing film sandwiched between 2 transparent protection films, one of which is made of the above sheet. The display has a liq. crystal cell sandwiched between polarizers using the above stretched film. The film is stretched without breaking or clouding for controlling optical property, so that the stretched film has desired optical anisotropy.

IT 460721-29-3P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (anisotropic layer on compensator sheet; cellulose ester film, optical **retarder**, optical compensator sheet, and polarizer for liq. crystal display)

RN 460721-29-3 CAPLUS

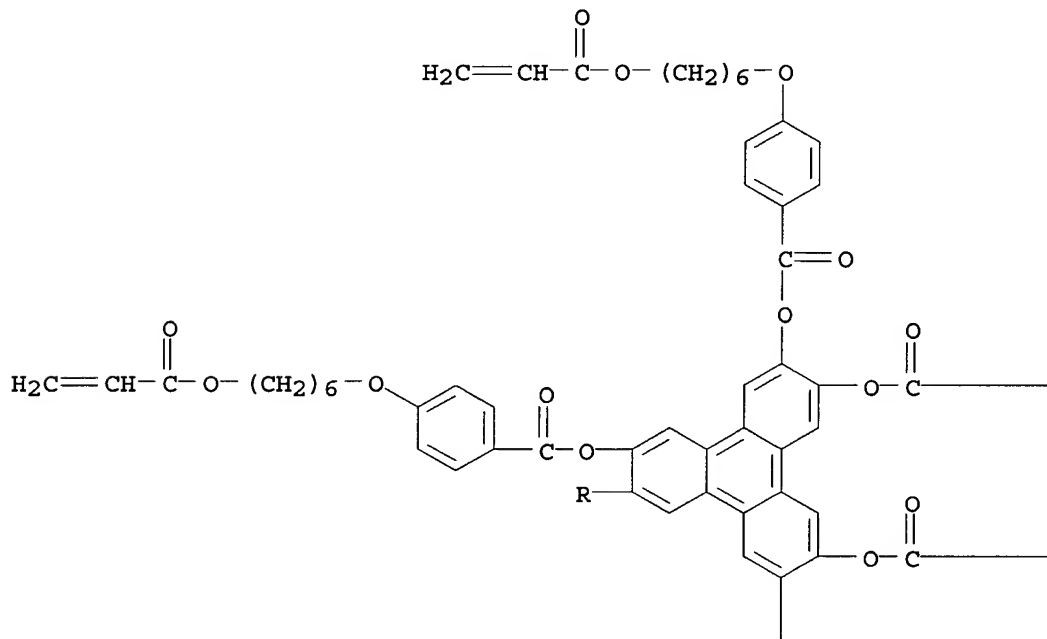
CN Benzoic acid, 4-[[6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]-, 2,3,6,7,10,11-triphenylenehexayl ester, polymer with [2-ethyl-2-[[2-[(1-oxo-2-propenyl)oxy]ethoxy]methyl]-1,3-propanediyl]bis(oxy-2,1-ethanediyl) di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

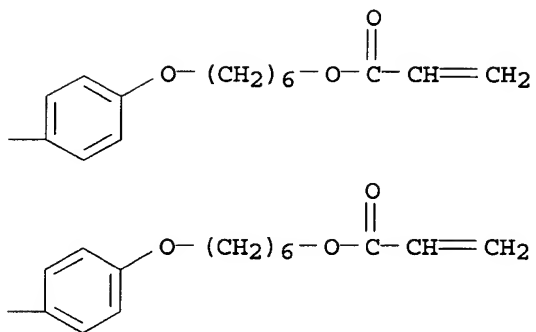
CRN 173071-44-8

CMF C114 H120 O30

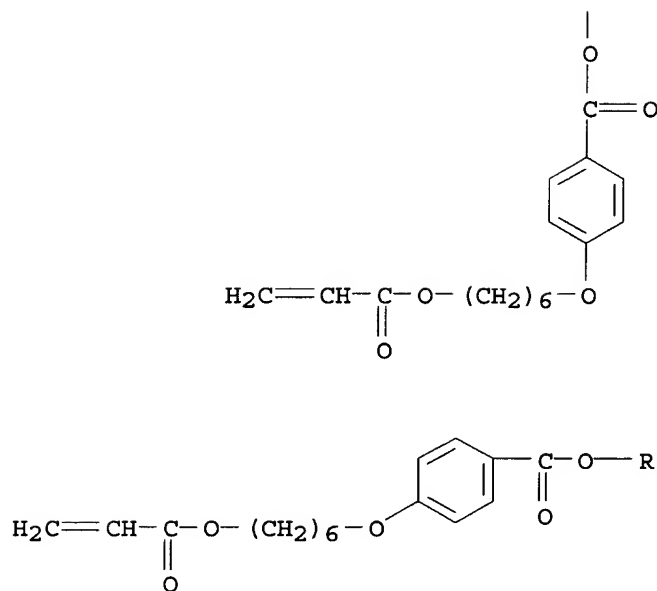
PAGE 1-A



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PAGE 2-A



CM 2

CRN 75577-70-7

CMF C21 H32 O9

KOROMA EIC1700



optical compensator sheet, and polarizer for liq. crystal display)  
IT 82504-70-9  
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(retardation controller; cellulose ester film, optical retarder, optical compensator sheet, and polarizer for liq. crystal display)

L25 ANSWER 11 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:539322 CAPLUS

DOCUMENT NUMBER: 137:117017

TITLE: Retardation film for liquid crystal displays and method for manufacturing thereof according to UV-irradiation process

INVENTOR(S): Sakai, Takeya; Uetsuki, Masao; Kawatsuki, Yoshihiro

PATENT ASSIGNEE(S): Hayashi Telempu Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

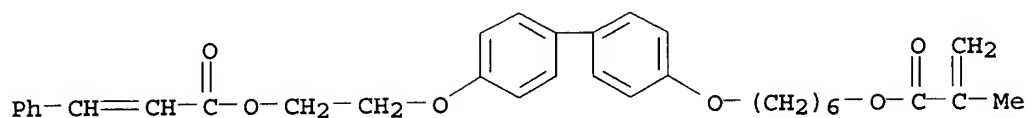
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2002202408	A2	20020719	JP 2000-400355	20001228
PRIORITY APPLN. INFO.:			JP 2000-400355	20001228
AB	The retardation film is manuf. by irradiating a mixt. of a light-sensitive polymer and a low mol. compd. and has $0.01 < R_{80} \text{ degree.C} / R_{30} \text{ degree.C} < 0.97$ of the ratio of retardation at $30 \text{ degree.C}$ and $80 \text{ degree.C}$ at the av. wavelength of visible light region, $1.15 < R_{400 \text{ nm}} / R_{550 \text{ nm}}$ of ratio of the retardation at 400 nm and 550 nm, and $0.1 \text{ to req. } \theta < 90 \text{ degree.}$ of the inclination of the optical axis( $\theta$ ). The retardation film shows the good temp. compensation effect and the well controlled optical axis direction.			
IT	199534-67-3P 443107-01-5P			
	RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)			
	(retardation film for liq. crystal displays)			
RN	199534-67-3 CAPLUS			
CN	2-Propenoic acid, 2-methyl-, 6-[[4'-[2-[(1-oxo-3-phenyl-2-propenyl)oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)			
CM	1			
CRN	199534-66-2			
CMF	C33 H36 O6			



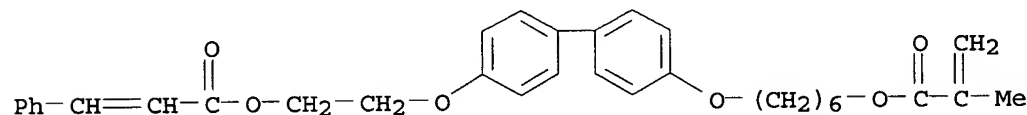
RN 443107-01-5 CAPLUS

CN 2-Propenoic acid, 2-methyl-, octadecyl ester, polymer with  
6-[[4'-[2-[(1-oxo-3-phenyl-2-propenyl)oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 199534-66-2

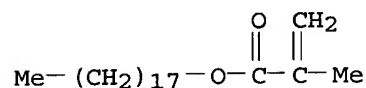
CMF C33 H36 O6



CM 2

CRN 32360-05-7

CMF C22 H42 O2



IC ICM G02B005-30

ICS G02F001-1336

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST retardation film liq crystal display manufg thereof UV irradiation

IT Optical instruments

(optical phase retardation film; retardation film for liq. crystal displays and method for manufg. thereof according to UV-irradiation.)

IT Liquid crystal displays

(retardation film for liq. crystal displays and method for manufg. thereof according to UV-irradiation.)

IT 92-88-6, 4,4'-Biphenyldiol 107-07-3, 2-Chloroethanol, reactions  
629-03-8, 1,6-Dibromohexane 4101-68-2, 1,10-Dibromodecane 4286-55-9  
13234-23-6, Lithium methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)  
(retardation film for liq. crystal displays)

KOROMA EIC1700

IT 199534-66-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (retardation film for liq. crystal displays)

IT 126757-88-8P 199534-67-3P 442638-55-3P 443107-01-5P 443107-10-6P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (retardation film for liq. crystal displays)

IT 63748-28-7, E 7 (Liquid crystal)  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (retardation film for liq. crystal displays)

L25 ANSWER 12 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:539321 CAPLUS

DOCUMENT NUMBER: 137:94907

TITLE: Optical retardation films and their manufacture by polarized and nonpolarized UV radiation

INVENTOR(S): Sakai, Takeya; Uetsuki, Masao; Kawatsuki, Yoshihiro

PATENT ASSIGNEE(S): Hayashi Telempu Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002202407	A2	20020719	JP 2000-400354	20001228
PRIORITY APPLN. INFO.:			JP 2000-400354	20001228

AB The films, useful for widening view angles of liq. crystal displays, are manufd. by irradiation of totally polarized and nonpolarized mixed light to mixed films of photosensitive polymers and low-mol.-wt. compounds. Thus, 3.75% homopolymer of CH<sub>2</sub>:CMeCO<sub>2</sub>(CH<sub>2</sub>)<sub>6</sub>O-1,4-C<sub>6</sub>H<sub>4</sub>-1,4-C<sub>6</sub>H<sub>4</sub>O(CH<sub>2</sub>)<sub>2</sub>OCOCH:CHPh and 1.25% E7 (liq. crystal) were dissolved in CH<sub>2</sub>Cl<sub>2</sub> and applied on a quartz board, irradiated with UV with a 45.degree. angle via 4 pieces of quartz board from both sides to give an optical retardation film with the optical axis angle 67.degree..

IT 442660-74-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (manuf. of optical retardation films by polarized and nonpolarized UV radiation)

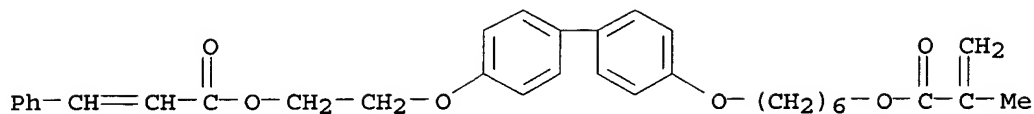
RN 442660-74-4 CAPLUS

CM 2-Propenoic acid, 2-methyl-, [1,1'-biphenyl]-4,4'-diylbis(oxy-6,1-hexanediyl) ester, polymer with 6-[[4'-[2-[(1-oxo-3-phenyl-2-propenyl)oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 199534-66-2

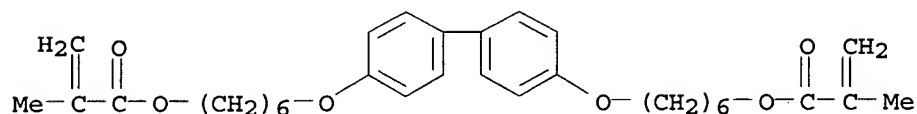
CMF C33 H36 O6



CM 2

CRN 126757-88-8

CMF C32 H42 O6



IC ICM G02B005-30

ICS C08J005-18; C08K005-00; C08L101-02; G02B001-04; G02F001-1336

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 73, 74

ST optical retardation film polarized nonpolarized UV radiation;  
 photosensitive polymer monomer radiation UV; bromohexyloxy biphenyl  
 methacrylate photocrosslinking optical retardation film; hydroxyethoxy  
 bromohexyloxy biphenyl methacrylate cinnamate polymer photocrosslinking  
 retardation film

IT Optical films

(manuf. of optical retardation films by polarized and nonpolarized UV  
 radiation)

IT Crosslinking

(photochem.; manuf. of optical retardation films by polarized and  
 nonpolarized UV radiation)

IT 183234-53-9P 183234-59-5P 189156-36-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(manuf. of optical retardation films by polarized and nonpolarized UV  
 radiation)

IT 442660-74-4P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)

(manuf. of optical **retardation films** by polarized  
 and nonpolarized UV radiation)

IT 92-88-6, 4,4'-Biphenyldiol 102-92-1, Cinnamoyl chloride 107-07-3,  
 2-Chloroethanol, reactions 629-03-8, 1,6-Dibromohexane 13234-23-6,  
 Lithium methacrylate 183234-70-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(manuf. of optical retardation films by polarized and nonpolarized UV radiation)

IT 126757-88-8P 199534-66-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and polymn. of; manuf. of optical retardation films by polarized and nonpolarized UV radiation)

L25 ANSWER 13 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:538423 CAPLUS

DOCUMENT NUMBER: 137:116736

TITLE: Optical retarder films with excellent transparency for liquid crystal displays and their manufacture

INVENTOR(S): Sakai, Takeya; Uetsuki, Masao; Kawatsuki, Yoshihiro

PATENT ASSIGNEE(S): Hayashi Telempu Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002202409	A2	20020719	JP 2000-400356	20001228
US 2002128341	A1	20020912	US 2001-26432	20011227
PRIORITY APPLN. INFO.:			JP 2000-400356	A 20001228
			JP 2001-196012	A 20010628
			JP 2001-196013	A 20010628
			JP 2001-271879	A 20010907

AB The retarder films, showing no microphase sepn., are manufd. by irradiation of films comprising photosensitive polymers (A) and low-mol.-wt. compds. (B) with (inclined) nonpolarized light (on both sides), where ratio of soly. parameter ( $\Delta$ ; calcd. based on evapn. energy and mol. vol.) of B to that of A satisfy  $>1.06$  and  $<0.93$ .

IT 199534-67-3P 199534-70-8P 443124-84-3P  
 443124-85-4P

RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(manuf. of transparent **retarder** films by

nonpolarized-light exposure of mesogen-contg. photopolymer films)

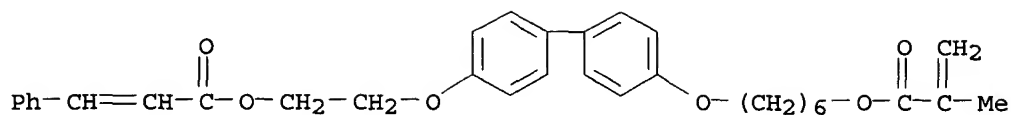
RN 199534-67-3 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-[2-[(1-oxo-3-phenyl-2-propenyl)oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 199534-66-2

CMF C33 H36 O6



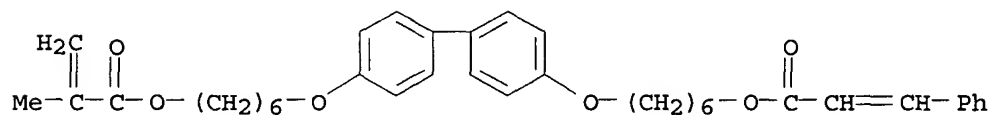
RN 199534-70-8 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-[[6-[(1-oxo-3-phenyl-2-propenyl)oxy]hexyl]oxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 199534-69-5

CMF C37 H44 O6



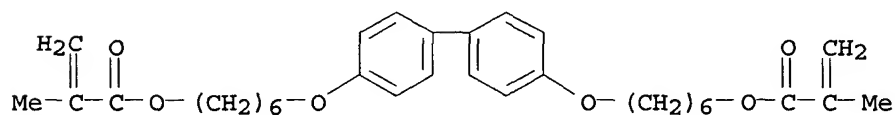
RN 443124-84-3 CAPLUS

CN 2-Propenoic acid, 2-methyl-, [1,1'-biphenyl]-4,4'-diylbis(oxy-6,1-hexanediyl) ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126757-88-8

CMF C32 H42 O6



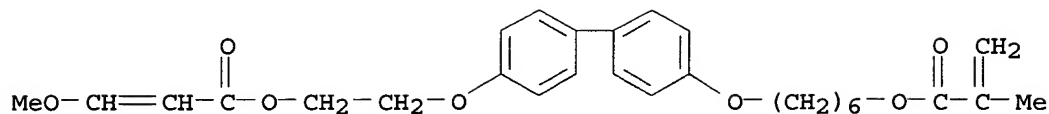
RN 443124-85-4 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-[2-[(3-methoxy-1-oxo-2-propenyl)oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 443124-72-9

CMF C28 H34 O7



- IC ICM G02B005-30  
ICS C08F002-44; C08F002-48; C08F291-00; G02B001-04; G02F001-1336
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 74, 75
- ST nonpolarized light oriented photopolymer film retarder; LCD retarder  
transparency photopolymer mesogen rearrangement
- IT Liquid crystal displays  
Liquid crystals  
Liquid crystals, polymeric  
(manuf. of optical-axes-regulated retarder films for LCD by nonpolarized-light exposure of photopolymers)
- IT UV radiation  
(manuf. of transparent retarder films by nonpolarized-light exposure of mesogen-contg. photopolymer films)
- IT Optical instruments  
(retarders, films; manuf. of optical-axes-regulated retarder films for LCD by nonpolarized-light exposure of photopolymers)
- IT 199534-67-3P 199534-70-8P 442638-55-3P 443124-81-0P  
443124-84-3P 443124-85-4P  
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(manuf. of transparent **retarder films** by nonpolarized-light exposure of mesogen-contg. photopolymer films)
- IT 126757-88-8P 183234-53-9P 183234-59-5P 183234-65-3P 183234-70-0P  
183234-74-4P 189156-36-3P 199534-66-2P 199534-69-5P 443124-59-2P  
443124-72-9P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(manuf. of transparent retarder films by nonpolarized-light exposure of mesogen-contg. photopolymer films)
- IT 92-88-6, 4,4'-Biphenyldiol 102-92-1, Cinnamoyl chloride 107-07-3,  
2-Chloroethanol, reactions 629-03-8, 1,6-Dibromohexane 4286-55-9  
13234-23-6, Lithium methacrylate 34446-64-5, 4-Methoxycinnamoyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(manuf. of transparent retarder films by nonpolarized-light exposure of mesogen-contg. photopolymer films)

L25 ANSWER 14 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:538422 CAPLUS

DOCUMENT NUMBER: 137:101217

TITLE: Retarder films with regulated optical axes for liquid crystal displays and their manufacture

INVENTOR(S): Sakai, Takeya; Uetsuki, Masao; Kawatsuki, Yoshihiro

KOROMA EIC1700

PATENT ASSIGNEE(S): Hayashi Telempu Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002202406	A2	20020719	JP 2000-400353	20001228

PRIORITY APPLN. INFO.: JP 2000-400353 20001228

AB The manufg. process involves irradiation of photosensitive polymer films containing low-mol.-wt. compounds with (inclined) nonpolarized light (on both sides). The photosensitive polymers may be liquid crystalline and the low-mol.-wt. compounds may be mesogens.

IT **199534-67-3P 230296-13-6P 442638-56-4P**  
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (manufacture of optical-axis-regulated **retarder films** by exposure to nonpolarized light for LCD)

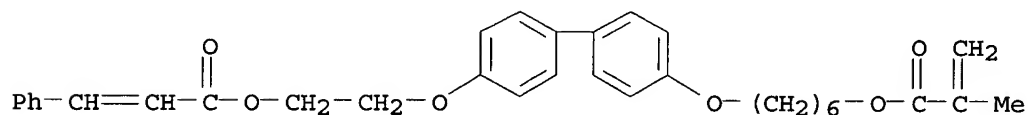
RN 199534-67-3 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-[2-[(1-oxo-3-phenyl-2-propenyl)oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 199534-66-2

CMF C33 H36 O6



RN 230296-13-6 CAPLUS

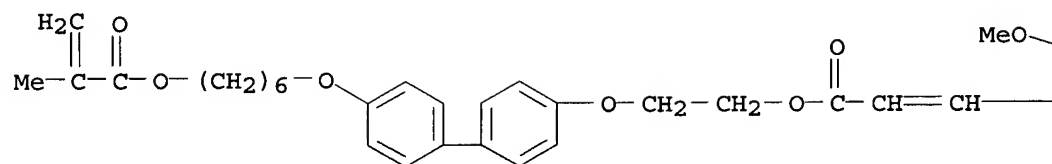
CN 2-Propenoic acid, 2-methyl-, 6-[[4'-[2-[[3-(2-methoxyphenyl)-1-oxo-2-propenyl]oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

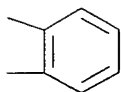
CRN 230296-12-5

CMF C34 H38 O7

PAGE 1-A



PAGE 1-B

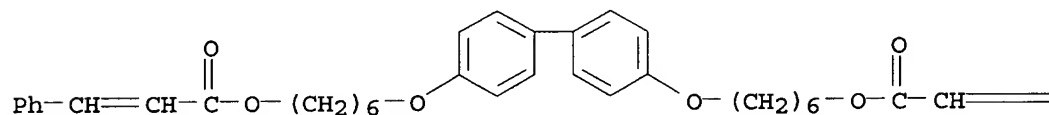


RN 442638-56-4 CAPLUS  
 CN 2-Propenoic acid, 3-phenyl-, [1,1'-biphenyl]-4,4'-diylbis(oxy-6,1-hexanediyl) ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 442638-55-3  
 CMF C42 H46 O6

PAGE 1-A



PAGE 1-B

=CH-Ph

IC ICM G02B005-30  
 ICS C08F002-48; C08F290-08; C08J005-18; G02B001-04; G02F001-1336;  
 G03F007-004; G03F007-038; C08L101-00  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 74  
 ST LCD retarder film regulated optical axis; nonpolarized light exposure LCD retarder manuf  
 IT Liquid crystals, polymeric

KOROMA EIC1700

(films; manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

IT UV radiation  
(inclined; manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

IT Liquid crystal displays  
(manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

IT Liquid crystals  
(retarder films contg.; manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

IT Optical instruments  
(retarders, films; manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

IT 199534-67-3P 230296-13-6P 442638-56-4P  
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

IT 63748-28-7, E7  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

IT 183234-53-9P 183234-59-5P 183234-70-0P 189156-36-3P 199534-66-2P 230296-12-5P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

IT 92-88-6, 4,4'-Biphenyldiol 102-92-1, Cinnamoyl chloride 107-07-3, 2-Chloroethanol, reactions 629-03-8, 1,6-Dibromohexane 4286-55-9 13234-23-6, Lithium methacrylate 15851-91-9, 2-Methoxycinnamoyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(manuf. of optical-axes-regulated retarder films by exposure to nonpolarized light for LCD)

L25 ANSWER 15 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:514329 CAPLUS

DOCUMENT NUMBER: 137:102597

TITLE: Epoxy carboxylates, photopolymer compositions using them, and their cured products useful for printed circuit boards

INVENTOR(S): Koyanagi, Takao; Oshimi, Katsuhiko

PATENT ASSIGNEE(S): Nippon Kayaku Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

KOROMA EIC1700

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002194051	A2	20020710	JP 2000-394819	20001226
PRIORITY APPLN. INFO.:			JP 2000-394819	20001226

OTHER SOURCE(S): MARPAT 137:102597

AB The epoxy carboxylates are prepd. by reaction of liq. **cryst.** epoxy compds. having .gtoreq.1 epoxy group with monocarboxylic acids having unsatd. double bonds. The epoxy compds. may be GO-p-C6H4CR:NN:CRC6H4-p-OG (G = glycidyl; R = H, Me). Photopolymer compns. contg. the epoxy carboxylates, photopolymn. initiators, and optionally crosslinking agents, and their cured products are also claimed. The photopolymer compns. show good **photosensitivity** and give cured products with good adhesion to substrates, hardness, and resistance to solvents, acids, heat, and gold plating, and are useful for solder resists and interlayer dielects. for printed circuit boards.

IT 441284-35-1P 441284-36-2P

RL: **IMF** (Industrial manufacture); TEM (Technical or engineered material use); **PREP** (Preparation); USES (Uses)

(photopolymer compns. contg. liq. **cryst.** epoxy carboxylates for solder resists and dielects. for printed circuit boards)

RN 441284-35-1 CAPLUS

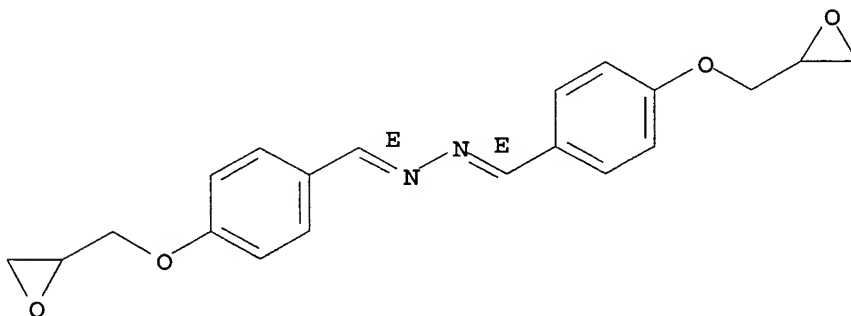
CN Hexanoic acid, 6-[(1-oxo-2-propenyl)oxy]-, 2-[[3-[[1-oxo-6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]-2,2-bis[[[1-oxo-6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]methyl]propoxy]methyl]-2-[[[1-oxo-6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]methyl]-1,3-propanediyl ester, polymer with 2-ethyl-2-[[[1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2-propenoic acid and [C(E)]-4-(oxiranylmethoxy)benzaldehyde (2E)-[[4-(oxiranylmethoxy)phenyl]methylene]hydrazone (9CI) (CA INDEX NAME)

CM 1

CRN 441284-34-0

CMF C20 H20 N2 O4

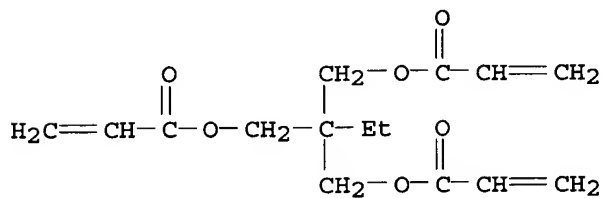
Double bond geometry as shown.



CRN 93294-97-4  
CMF C64 H94 O25

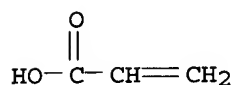
[illegible]
$$\begin{array}{c} \text{O} \\ \parallel \\ -(\text{CH}_2)_5-\text{O}-\text{C}-\text{CH}=\text{CH}_2 \\ \\ \text{O} \\ \parallel \\ -(\text{CH}_2)_5-\text{O}-\text{C}-\text{CH}=\text{CH}_2 \\ \\ \text{O} \\ \parallel \\ -(\text{CH}_2)_5-\text{O}-\text{C}-\text{CH}=\text{CH}_2 \end{array}$$

CRN 15625-89-5  
CMF C15 H20 O6



KOROMA EIC1700

CRN 79-10-7  
CMF C3 H4 O2

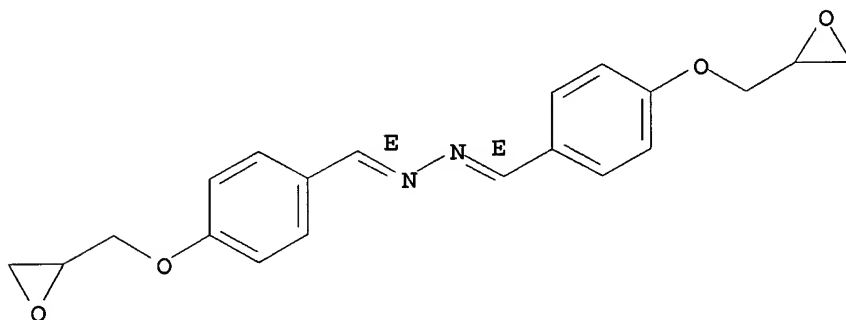


RN 441284-36-2 CAPLUS  
CN Hexanoic acid, 6-[(1-oxo-2-propenyl)oxy]-, 2-[[3-[[1-oxo-6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]-2,2-bis[[[1-oxo-6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]methyl]propoxy]methyl]-2-[[[1-oxo-6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]methyl]-1,3-propanediyl ester, polymer with [C(E)]-4-(oxiranylmethoxy)benzaldehyde (2E)-[[4-(oxiranylmethoxy)phenyl]methylene]hydrazone and 2-propenoic acid (9CI)  
(CA INDEX NAME)

CM 1

CRN 441284-34-0  
CMF C20 H20 N2 O4

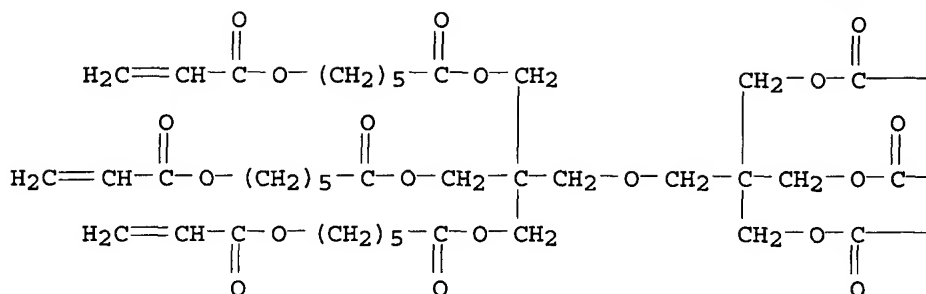
Double bond geometry as shown.



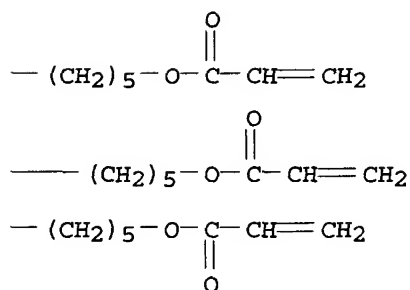
CM 2

CRN 93294-97-4  
CMF C64 H94 O25

PAGE 1-A



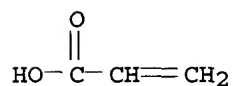
PAGE 1-B



CM 3

CRN 79-10-7

CMF C3 H4 O2



IC ICM C08G059-17

ICS C08G059-18; H05K003-28; H05K003-46; G03F007-027

CC 76-14 (Electric Phenomena)

Section cross-reference(s): 37, 38, 74

ST epoxy unsatd carboxylate photopolymer solder resist; printed circuit board  
dielec epoxy acrylate; **liq cryst** epoxy acrylate solder  
resist

IT Epoxy resins, uses

RL: **IMF** (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); **PREP** (Preparation); RACT (Reactant or reagent); USES (Uses)

(acrylates; photopolymer compns. contg. liq. cryst.

KOROMA EIC1700

epoxy carboxylates for solder resists and dielecs. for printed circuit boards)

IT Epoxy resins, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic; photopolymer compns. contg. liq. cryst.  
 epoxy carboxylates for solder resists and dielecs. for printed circuit boards)

IT Dielectric films  
 Liquid crystals  
 Printed circuit boards  
 Solder resists  
 (photopolymer compns. contg. liq. cryst. epoxy  
 carboxylates for solder resists and dielecs. for printed circuit boards)

IT 441284-34-0P  
 RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (photopolymer compns. contg. liq. cryst. epoxy  
 carboxylates for solder resists and dielecs. for printed circuit boards)

IT 441284-35-1P 441284-36-2P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (photopolymer compns. contg. liq. cryst. epoxy  
 carboxylates for solder resists and dielecs. for printed circuit boards)

IT 79-10-7, Acrylic acid, reactions 106-89-8, Epichlorohydrin, reactions 123-08-0, p-Hydroxybenzaldehyde 302-01-2, Hydrazine, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant; photopolymer compns. contg. liq. cryst.  
 epoxy carboxylates for solder resists and dielecs. for printed circuit boards)

L25 ANSWER 16 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:514074 CAPLUS

DOCUMENT NUMBER: 137:64277

TITLE: Cellulose acetate laminated films with good adhesion to hydrophilic polymers and their optical and photographic uses

INVENTOR(S): Murayama, Masahiko

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002192656	A2	20020710	JP 2000-393431	20001225

PRIORITY APPLN. INFO.:

JP 2000-393431

20001225

AB The laminated film, useful for retarders, polarizers, liq. crystal displays (LCD), photog. films, etc., comprises a main film of a cellulose acetate (I) with acetylation degree 2.5-3.0 and at least on one side a layer of I with acetylation degree 0.5-2.2 (<2.2) by 0.1-100 g/m<sup>2</sup>. Thus, I with acetylation degree 2.9 and I with acetylation degree 1.8 were co-extruded to give a laminate showing surface energy 60 mN/m and surface resistivity 0.5 .times. 10<sup>10</sup> .OMEGA..

IT 439689-44-8P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(retarder; cellulose acetate laminated films with good adhesion to hydrophilic polymers for optical and photog. uses)

RN 439689-44-8 CAPLUS

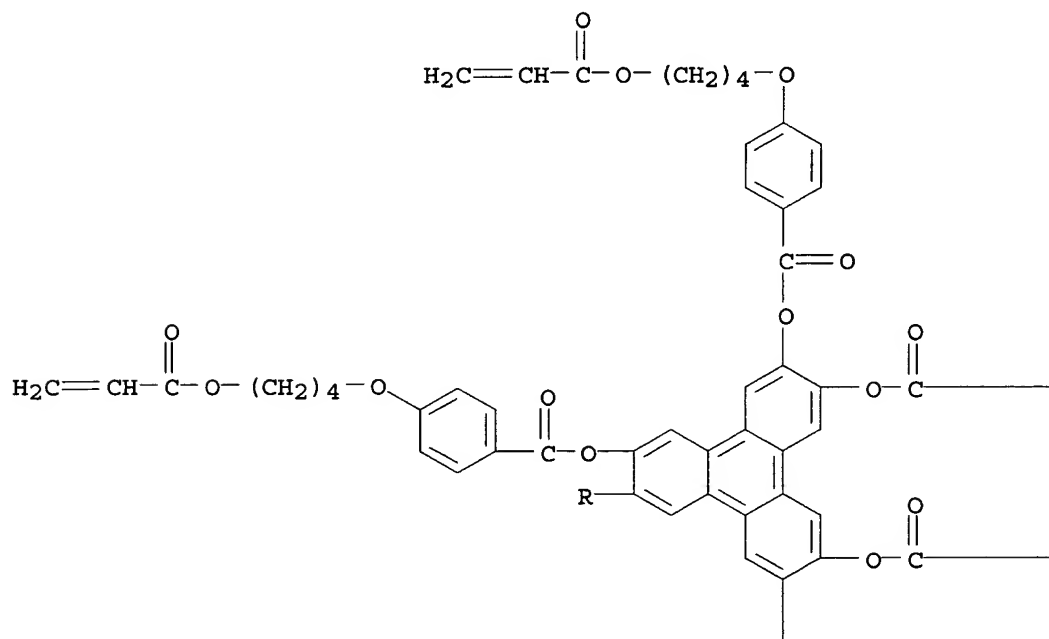
CN Benzoic acid, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]-, 2,3,6,7,10,11-triphenylenehexayl ester, polymer with 2-ethyl-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

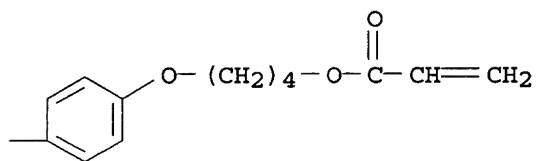
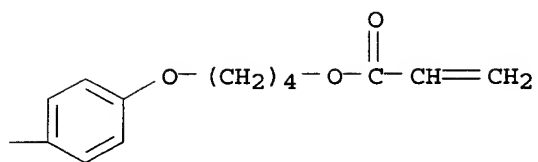
CRN 174079-42-6

CMF C102 H96 O30

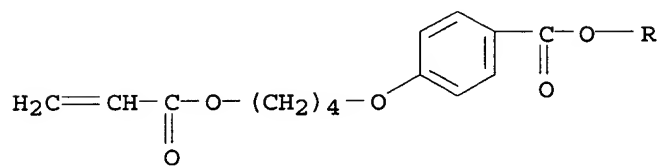
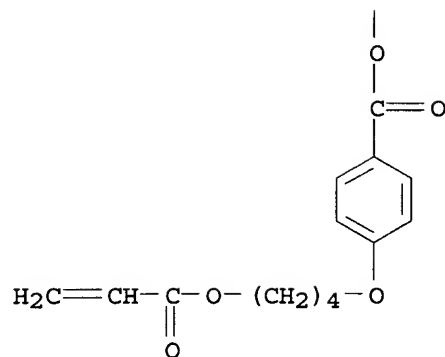
PAGE 1-A



PAGE 1-B



PAGE 2-A

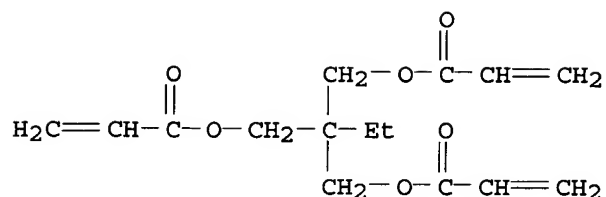


CM 2

CRN 15625-89-5

CMF C15 H20 O6

KOROMA EIC1700



- IC ICM B32B023-00  
ICS B29C041-32; G02F001-1335; G02F001-1336; B29K001-00; B29L007-00; B29L009-00; B29L011-00
- CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 73, 74
- ST cellulose acetate laminate adhesion retarder LCD; photog film cellulose acetate acetylation degree; polarizer cellulose acetate hydrophilic polymer adhesion
- IT Polyesters, uses  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic, retarder; cellulose acetate laminated films with good adhesion to hydrophilic polymers for optical and photog. uses)
- IT Liquid crystal displays  
Photographic films  
Polarizing films  
Transparent films  
(cellulose acetate laminated films with good adhesion to hydrophilic polymers for optical and photog. uses)
- IT Gelatins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photog. film, adhesion to; cellulose acetate laminated films with good adhesion to hydrophilic polymers for optical and photog. uses)
- IT Optical instruments  
(retarders; cellulose acetate laminated films with good adhesion to hydrophilic polymers for optical and photog. uses)
- IT 9035-69-2, Cellulose diacetate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(adhesive layer; cellulose acetate laminated films with good adhesion to hydrophilic polymers for optical and photog. uses)
- IT 139352-17-3, MP 203 182154-45-6, Vinyl acetate-vinyl alcohol-vinyl [4-(4-acryloxytetramethylene)oxy]benzoate copolymer  
RL: TEM (Technical or engineered material use); USES (Uses)  
(alignment film, adhesion to; cellulose acetate laminated films with good adhesion to hydrophilic polymers for optical and photog. uses)
- IT 9004-35-7, Cellulose acetate  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(cellulose acetate laminated films with good adhesion to hydrophilic polymers for optical and photog. uses)
- IT 9002-89-5, Polyvinyl alcohol

RL: TEM (Technical or engineered material use); USES (Uses)  
(polarizer, protective films for; cellulose acetate laminated films  
with good adhesion to hydrophilic polymers for optical and photog.  
uses)

IT 82504-70-9

RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
use); USES (Uses)  
(retardation improver; cellulose acetate laminated films with good  
adhesion to hydrophilic polymers for optical and photog. uses)

IT 75577-71-8P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(retarder; cellulose acetate laminated films with good adhesion to  
hydrophilic polymers for optical and photog. uses)

IT 439689-44-8P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(retarder; cellulose acetate laminated films with  
good adhesion to hydrophilic polymers for optical and photog. uses)

IT 9004-36-8, Cellulose, acetate butanoate

RL: POF (Polymer in formulation); TEM (Technical or engineered material  
use); USES (Uses)  
(retarder; cellulose acetate laminated films with good adhesion to  
hydrophilic polymers for optical and photog. uses)

L25 ANSWER 17 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:482652 CAPLUS

DOCUMENT NUMBER: 137:70829

TITLE: Preparation of optically active binaphthol derivative  
as photoreactive chiral reagent and liquid  
crystal composition, method for alteration or  
fixation of liquid crystal spiral  
structure, liquid crystal color  
filter, optical film, and optical recording  
medium

INVENTOR(S): Yumoto, Masatoshi; Hayashi, Keiichiro; Ichihashi,  
Mitsuyoshi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.

CODEN: JKXXAF

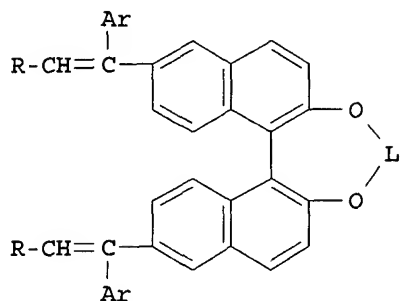
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002179670	A2	20020626	JP 2000-381002	20001214
PRIORITY APPLN. INFO.:			JP 2000-381002	20001214
OTHER SOURCE(S):	MARPAT 137:70829			
GI				



AB The title compd. [(R)- or (S)-I; Ar = aryl, heterocyclyl; R = alkoxy carbonyl, aryloxy carbonyl, aryl, heterocyclyl, CONH<sub>2</sub>, cyano; L = a divalent group], which is photoisomerizable and can alter a spiral structure [twisting power or angle, in particular helical twisting power (HTP)] of liq. crystal upon light irradiation to provide a image display with high contrast and color purity, is prepd. Also disclosed is a liq. crystal compn. contg. a liq. crystal compd. contg. at least one polymerizable group, a photopolymn. initiator, and the optically active compd. I, in particular where the photopolymn. initiator and the optically active compd. I have a different photosensitive wavelength region. The spiral structure of the liq. crystal compn. is altered by changing the structure of the optically active compd. I upon photoirradiation of the above liq. crystal compn. A method for fixation of the spiral structure of the liq. crystal possesses a step comprising image-wise irradiation of the above liq. crystal compn. with light at the photosensitive wavelength region of the optically active compd. I and subsequent photopolymn. by irradiation with light at the photosensitive wavelength region of the photopolymn. initiator. A liq. crystal color filter, an optical film, and a recording medium contg. at least one liq. crystal compd. and the above optically active compd. I are also disclosed. Thus, (S)-2,2'-methylenedioxy-6,6'-dibromo-1,1'-binaphthol 1.6, Me 4-methoxycinnamate 1.5, dichlorobis(triphenylphosphine)palladium(II) 0.12, Bu<sub>4</sub>NBr 2.6, K<sub>2</sub>CO<sub>3</sub> 1.0 g and 20 mL DMF were mixed and stirred at room temp. for 10 h to give 7.6% (S)-I (Ar = 4-methoxyphenyl, R = MeO<sub>2</sub>C) (II) in E/Z ratio of 19/1. When a nematic liq. crystal compn. contg. 0.5 part II and 99.5 part ZLI-1132 having a spiral pitch of 55.6 .μm (HTP of 3.6 .μm<sup>-1</sup>) was irradiated by a high-pressure mercury lamp (300 mW/cm<sup>2</sup>) for 3 min, a spiral pitch changed to 5.11 .μm (HTP of 39 .μm<sup>-1</sup>). A circular polarized light reflecting plate, a liq. crystal color filter, and a super-twisted-nematic liq. crystal display (STN) device optical compensation film with a polymer film contg. II were also fabricated.

IT 439683-85-9P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(STN device optical compensation film; prepn. of optically active binaphthol deriv. as photoisomerizable chiral reagent and liq. crystal color filter, optical film, and optical recording medium)

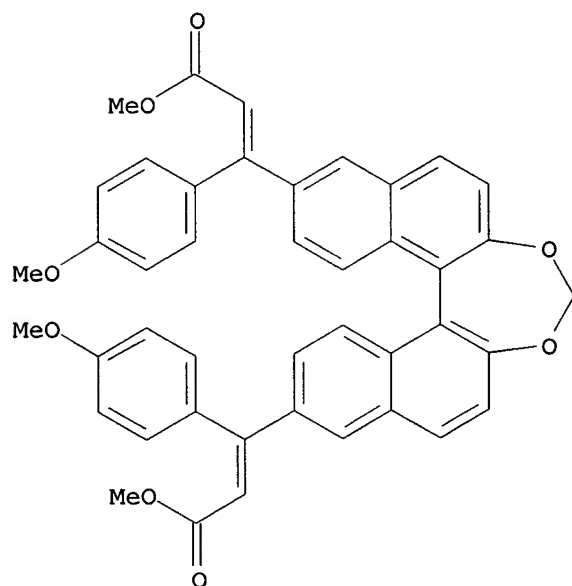
RN 439683-85-9 CAPLUS

CN Benzoic acid, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]-, 2,6-naphthalenediyl ester, polymer with 1,4-phenylene bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], mixt. with dimethyl 3,3'-(11bS)-dinaphtho[2,1-d:1',2'-f][1,3]dioxepin-9,14-diylbis[(2E)-3-(4-methoxyphenyl)-2-propenoate] and phenylbis(2,4,6-trimethylbenzoyl)phosphine oxide (9CI) (CA INDEX NAME)

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CRN 439683-72-4

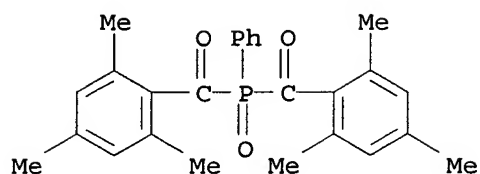
CMF C43 H34 O8



CM 2

CRN 162881-26-7

CMF C26 H27 O3 P



CM 3

CRN 339588-80-6

CMF (C38 H36 O10 . C34 H34 O10)x

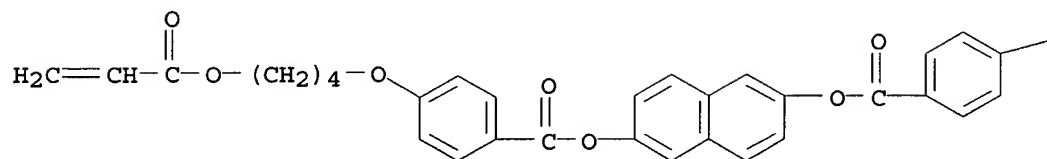
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CM 4

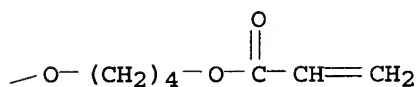
CRN 339588-79-3

CMF C38 H36 O10

PAGE 1-A



PAGE 1-B

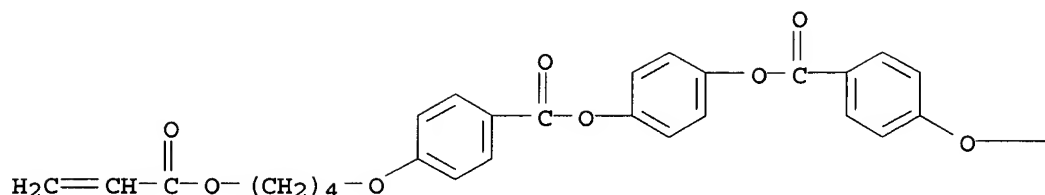


CM 5

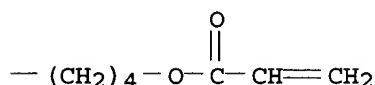
CRN 132694-65-6

CMF C34 H34 O10

PAGE 1-A



PAGE 1-B



IT 439683-80-4P

RL: PRP (Properties); SPN (Synthetic preparation); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)

(circular polarized light reflecting plate; prepn. of optically active  
binaphthol deriv. as photoisomerizable chiral reagent and liq  
. crystal color filter, optical film, and optical  
recording medium)

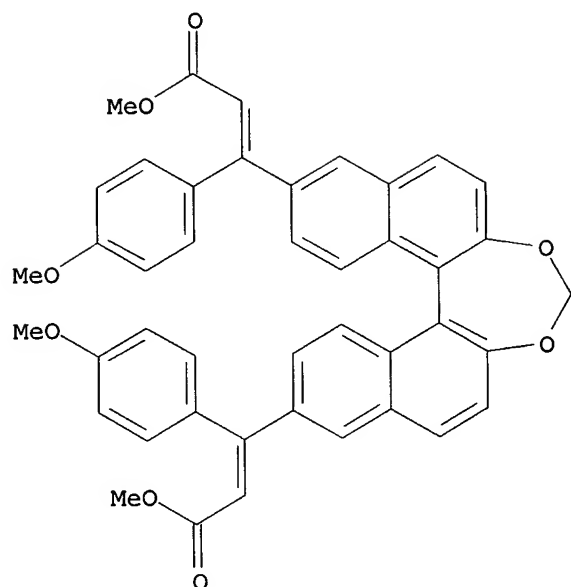
RN 439683-80-4 CAPLUS

CN D-Glucitol, 1,4:3,6-dianhydro-, bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], polymer with 2,6-naphthalenediyl  
bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate] and 1,4-phenylene  
bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], mixt. with  
4-(2H-benzotriazol-2-yl)-1,3-benzenediol, 2-(4-chlorophenyl)-4,6-  
bis(trichloromethyl)-1,3,5-triazine and dimethyl 3,3'-(11bS)-dinaphtho[2,1-  
d:1',2'-f][1,3]dioxepin-9,14-diylbis[(2E)-3-(4-methoxyphenyl)-2-  
propenoate] (9CI) (CA INDEX NAME)

CM 1

CRN 439683-72-4

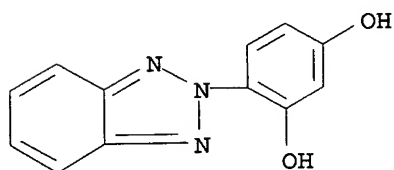
CMF C43 H34 O8



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CRN 22607-31-4

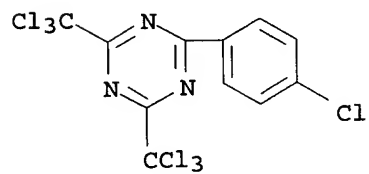
CMF C12 H9 N3 O2



CM 3

CRN 3712-60-5

CMF C11 H4 Cl7 N3



KOROMA EIC1700

CM 4

CRN 387822-81-3

CMF (C38 H36 O10 . C34 H38 O12 . C34 H34 O10)x

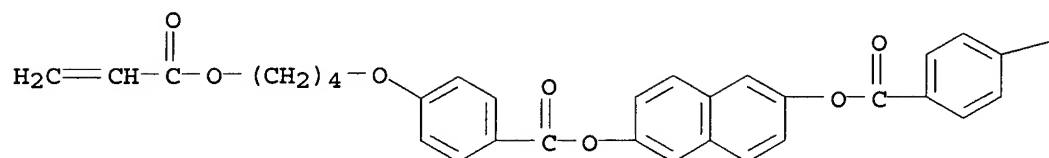
CCI PMS

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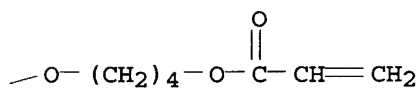
CRN 339588-79-3

CMF C38 H36 O10

PAGE 1-A



PAGE 1-B



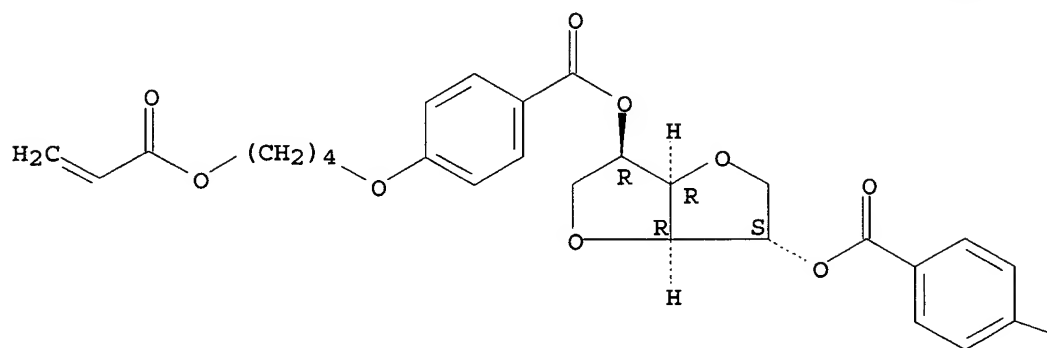
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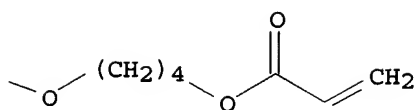
CMF C34 H38 O12

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

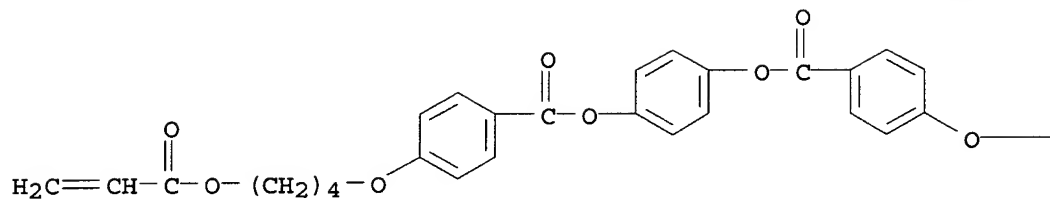


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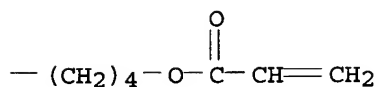
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CMF C34 H34 O10

PAGE 1-A



PAGE 1-B



IT 439683-83-7P

RL: PRP (Properties); SPN (Synthetic preparation); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)

(liq. crystal color filter; prepn. of optically  
active binaphthol deriv. as photoisomerizable chiral reagent and  
liq. crystal color filter, optical film,

KOROMA EIC1700

and optical recording medium)

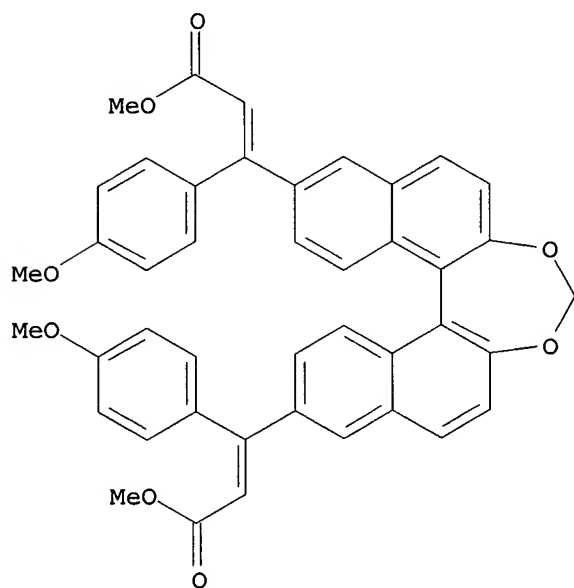
RN 439683-83-7 CAPLUS

CN D-Glucitol, 1,4:3,6-dianhydro-, bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], polymer with dimethyl 3,3'-(11bS)-dinaphtho[2,1-d:1',2'-f][1,3]dioxepin-9,14-diylbis[(2E)-3-(4-methoxyphenyl)-2-propenoate], 2,6-naphthalenediyl bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and 1,4-phenylene bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate] (9CI) (CA INDEX NAME)

CM 1

CRN 439683-72-4

CMF C43 H34 O8

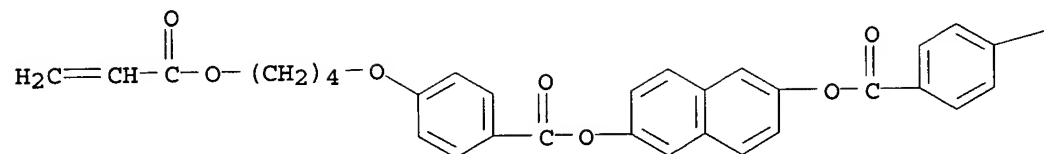


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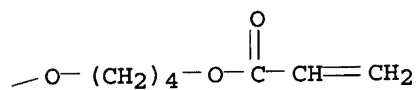
CRN 339588-79-3

CMF C38 H36 O10

PAGE 1-A



PAGE 1-B



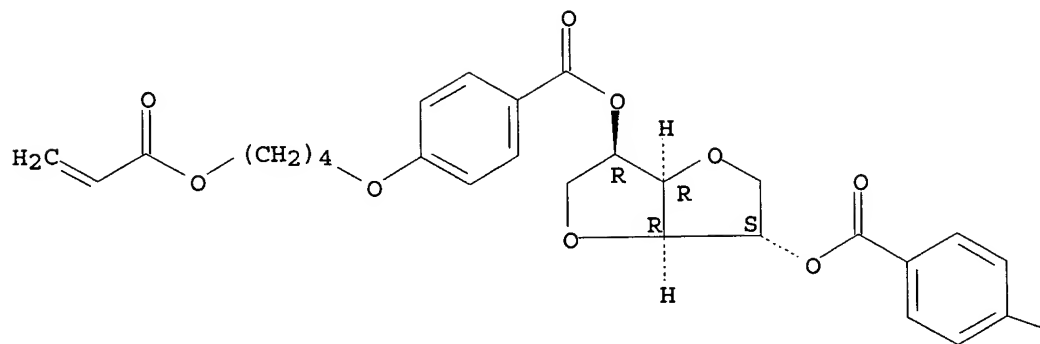
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CRN 250230-59-2

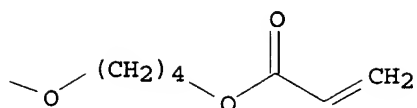
CMF C34 H38 O12

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

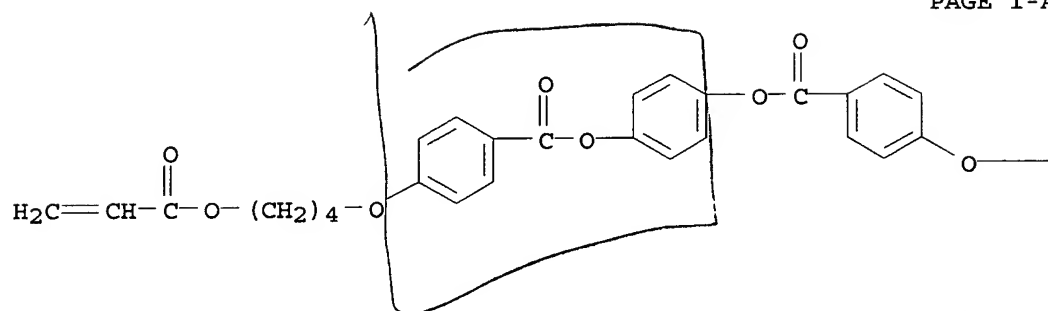


CM 4

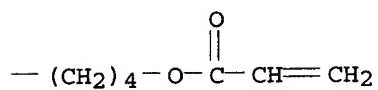
CRN 132694-65-6

CMF C34 H34 O10

PAGE 1-A



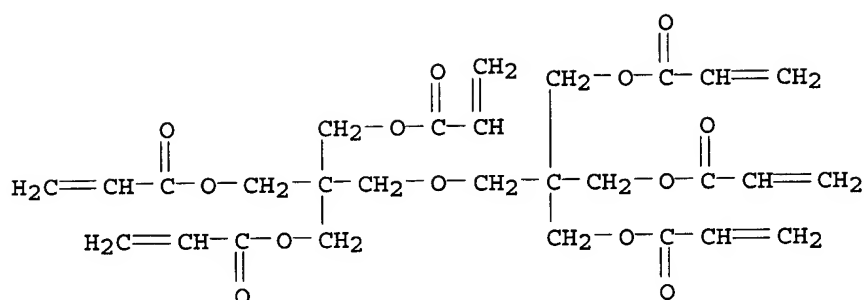
PAGE 1-B



CM 5

CRN 29570-58-9

CMF C28 H34 O13



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IC      ICM      C07D321-10
ICS     C07D407-06; C07D493-04; C09K019-38; C09K019-54; G02B005-20;
        G02B005-30; G02F001-13; G02F001-1335; G03C001-73
CC      75-11 (Crystallography and Liquid Crystals)
        Section cross-reference(s): 74
ST      optically active binaphthol prepn photoreactive chiral reagent liq
crystal; photoisomerizable optically active binaphthol prepn
liq crystal compn; spiral structure fixation photopolymn
IT      Isomerization
        (cis-trans, photochem.; prepn. of optically active binaphthol deriv. as
        photoisomerizable chiral reagent and liq. crystal
        compn. and alteration or fixation of liq. crystal
        spiral structure, liq. crystal color filter,
        optical film, and optical recording medium)
IT      Optical filters
        (liq. crystal; prepn. of optically active
        binaphthol deriv. as photoisomerizable chiral reagent and liq
        . crystal color filter, optical film, and optical
        recording medium)
IT      Liquid crystals
        (nematic; prepn. of optically active binaphthol deriv. as
        photoisomerizable chiral reagent and liq. crystal
        compn. and alteration or fixation of liq. crystal
        spiral structure, liq. crystal color filter,
        optical film, and optical recording medium)
IT      Liquid crystal displays
        Liquid crystals
        Liquid crystals, polymeric
        Optical films
        Optical recording materials
        Polarizing films
        (prepn. of optically active binaphthol deriv. as photoisomerizable
        chiral reagent and liq. crystal compn. and
        alteration or fixation of liq. crystal spiral
        structure, liq. crystal color filter, optical
        film, and optical recording medium)
IT      439683-85-9P
        RL: DEV (Device component use); PRP (Properties); SPN (Synthetic
        preparation); PREP (Preparation); USES (Uses)

```

(STN device optical compensation film; prepn. of optically active binaphthol deriv. as photoisomerizable chiral reagent and liq. crystal color filter, optical film, and optical recording medium)

IT 439683-80-4P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(circular polarized light reflecting plate; prepn. of optically active binaphthol deriv. as photoisomerizable chiral reagent and liq. crystal color filter, optical film, and optical recording medium)

IT 439683-83-7P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(liq. crystal color filter; prepn. of optically active binaphthol deriv. as photoisomerizable chiral reagent and liq. crystal color filter, optical film, and optical recording medium)

IT 439683-73-5P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(prepn. of optically active binaphthol deriv. as photoisomerizable chiral reagent and liq. crystal compn. and alteration or fixation of liq. crystal spiral structure, liq. crystal color filter, optical film, and optical recording medium)

IT 832-01-9, Methyl 4-methoxycinnamate 180135-89-1

RL: RCT (Reactant); RACT (Reactant or reagent) (prepn. of optically active binaphthol deriv. as photoisomerizable chiral reagent and liq. crystal compn. and alteration or fixation of liq. crystal spiral structure, liq. crystal color filter, optical film, and optical recording medium)

IT 439683-72-4P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (prepn. of optically active binaphthol deriv. as photoisomerizable chiral reagent and liq. crystal compn. and alteration or fixation of liq. crystal spiral structure, liq. crystal color filter, optical film, and optical recording medium)

L25 ANSWER 18 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:353997 CAPLUS

DOCUMENT NUMBER: 136:361937

TITLE: Polyamideimide photoalignment materials for liquid crystal display device

INVENTOR(S): Shin, Hyun Ho; Nam, Mi Sook; Park, Su Hyun; Ree, Moonhor; Lee, Seung Woo

$$\left[ \text{---} \begin{array}{c} \text{C}_6\text{H}_4 \\ | \\ (\text{X}^1 - \text{R}^1)_a \end{array} \text{NHCO-CH=CH-C}_6\text{H}_4\text{---CH=CH---CONH} \begin{array}{c} \text{C}_6\text{H}_4 \\ | \\ (\text{X}^2 - \text{R}^2)_b \end{array} \text{N} \begin{array}{c} \diagup \quad \diagdown \\ \text{O} \qquad \text{O} \end{array} \text{Ar} \begin{array}{c} \diagdown \quad \diagup \\ \text{O} \qquad \text{O} \end{array} \text{N} \right]_n$$

AB Disclosed are polyamideimide photoalignment materials having a **photosensitive** diamine deriv. compd. with side branches, and **liq. crystal** display devices using such a photoalignment material, beneficially as an alignment **film**. The polyamideimide photoalignment materials have a chem. structure of the general formula I (a, b = 0-4; X1, X2 = -CH2-, -CH=, -O-, -COO-, -OOC-, -NHCO-, -CONH-; R1, R2 = H, halogen, cyano, nitro, amino, C1-100-alkyl, haloalkyl, cyanoalkyl, nitroalkyl, hydroxyalkyl, cyanohaloalkyl, nitrohaloalkyl, cyanonitroalkyl, hydroxyhaloalkyl, cyanohydroxyalkyl, hydroxynitroalkyl, C6-100-aryl, alkylaryl, haloaryl, haloalkylaryl, nitroaryl, nitroalkylaryl, cyanoaryl, cyanoalkylaryl, nitroaryl, nitroalkylaryl, hydroxyaryl, hydroxyalkylaryl, cyanohaloaryl, cyanohaloalkylaryl; and Ar as further defined in the claims). The present invention provides photoalignment polyamideimide materials which have good photoalignment properties, increase pretilt angle and improve viewing angle of the **liq. crystal** display.

RL: DEV (Device component use); SPN (Synthetic preparation);  
PREP (Preparation); USES (Uses)  
(polyamideimide photoalignment materials for liq.  
crystal display device)

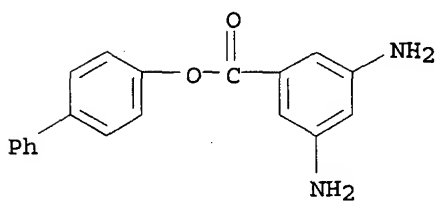
RN 422294-28-8 CAPLUS

CN Benzoic acid, 3,5-diamino-, [1,1'-biphenyl]-4-yl ester, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and 3,3'-(1,4-phenylene)bis[2-propenoic acid] (9CI) (CA INDEX NAME)

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CRN 136951-59-2

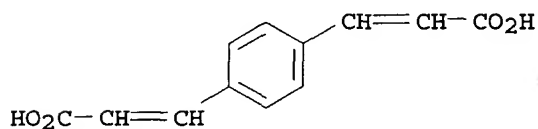
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CM 2

CRN 16323-43-6

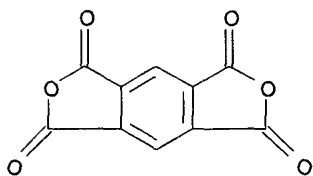
CMF C12 H10 O4



CM 3

CRN 89-32-7

CMF C10 H2 O6



RN 422294-30-2 CAPLUS

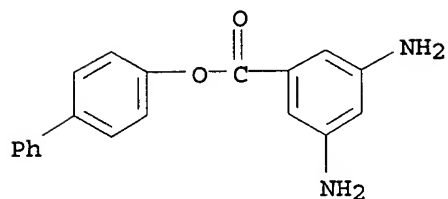
CN Benzoic acid, 3,5-diamino-, [1,1'-biphenyl]-4-yl ester, polymer with [5,5'-biisobenzofuran]-1,1',3,3'-tetrone and 3,3'-(1,4-phenylene)bis[2-propenoic acid] (9CI) (CA INDEX NAME)

KOROMA EIC1700

CM 1

CRN 136951-59-2

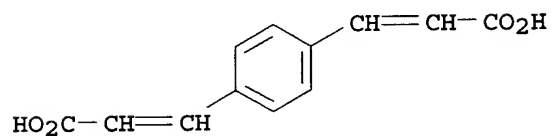
CMF C19 H16 N2 O2



CM 2

CRN 16323-43-6

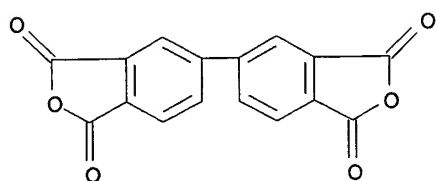
CMF C12 H10 O4



CM 3

CRN 2420-87-3

CMF C16 H6 O6



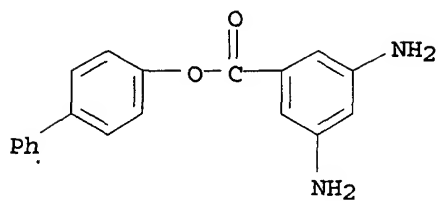
RN 422294-32-4 CAPLUS

CN Benzoic acid, 3,5-diamino-, [1,1'-biphenyl]-4-yl ester, polymer with 5,5'-oxybis[1,3-isobenzofurandione] and 3,3'-(1,4-phenylene)bis[2-propenoic acid] (9CI) (CA INDEX NAME)

CM 1

CRN 136951-59-2

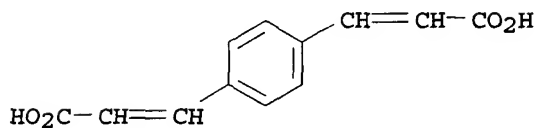
CMF C19 H16 N2 O2



CM 2

CRN 16323-43-6

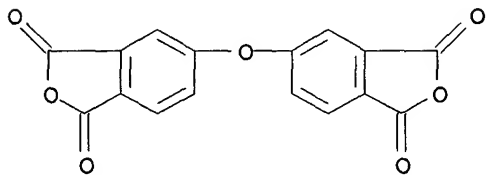
CMF C12 H10 O4



CM 3

CRN 1823-59-2

CMF C16 H6 O7



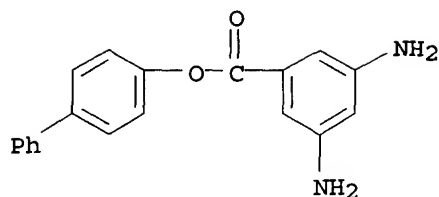
RN 422294-34-6 CAPLUS

CN Benzoic acid, 3,5-diamino-, [1,1'-biphenyl]-4-yl ester, polymer with 3,3'-(1,4-phenylene)bis[2-propenoic acid] and 5,5'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[1,3-isobenzofurandione] (9CI) (CA INDEX NAME)

CM 1

CRN 136951-59-2

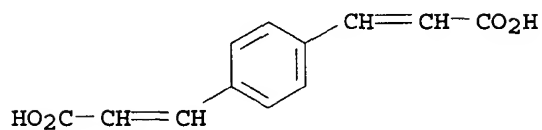
CMF C19 H16 N2 O2



CM 2

CRN 16323-43-6

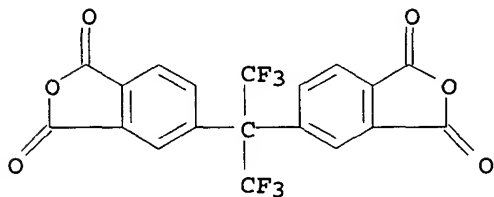
CMF C12 H10 O4



CM 3

CRN 1107-00-2

CMF C19 H6 F6 O6



IC ICM C09K019-00

ICS G02F001-13; B32B003-06

NCL 428001260

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37, 38

ST polyamideimide photoalignment material liq crystal display

IT Polyimides, preparation

RL: DEV (Device component use); SPN (Synthetic preparation);

PREP (Preparation); USES (Uses)

(polyamide-; polyamideimide photoalignment materials for liq. crystal display device)

IT Liquid crystal displays

KOROMA EIC1700

(polyamideimide photoalignment materials for liq.  
crystal display device)

IT Polyamides, preparation  
RL: DEV (Device component use); SPN (Synthetic preparation);  
PREP (Preparation); USES (Uses)  
(polyimide-; polyamideimide photoalignment materials for liq.  
crystal display device)

IT 92-69-3, 4-Phenyl phenol 535-87-5, 3,5-Diaminobenzoic acid 16323-43-6,  
1,4-Phenylene diacrylic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in prepn. of diamine deriv.)

IT 136951-59-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(in prepn. of photosensitive arom. polyamideimide  
photoalignment material)

IT 422285-24-3P 422294-28-8P 422294-30-2P  
422294-32-4P 422294-34-6P  
RL: DEV (Device component use); SPN (Synthetic preparation);  
PREP (Preparation); USES (Uses)  
(polyamideimide photoalignment materials for liq.  
crystal display device)

L25 ANSWER 19 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:313284 CAPLUS

DOCUMENT NUMBER: 136:332868

TITLE: Optical retardation film and elliptically polarizing  
film using it

INVENTOR(S): Tanaka, Koichi

PATENT ASSIGNEE(S): Nippon Kayaku Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2002122733          | A2   | 20020426 | JP 2000-314573  | 20001016 |
| PRIORITY APPLN. INFO.: |      |          | JP 2000-314573  | 20001016 |

AB The optical retardation film comprises a polymer film successively coated  
with a gelatin layer and a liq. crystal layer. The film is manufd. by (1)  
forming a gelatin layer on a long-sized polymer film, (2) rubbing the  
gelatin layer and forming the liq. crystal layer to align the liq. crystal  
layer at the direction other than the rubbing direction. Elliptically  
polarizing film comprising the optical retardation film and a polarizing  
film, its manuf., and a liq. crystal display using the optical retarder or  
the polarizing film are also claimed. The film is manufd. easily and has  
slow axis at direction other than longitudinal direction.

IT 412334-48-6P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material

use); PREP (Preparation); USES (Uses)  
 (optical **retardation film** comprising polymer  
**film** coated with gelatin and liq. crystal layers)

RN 412334-48-6 CAPLUS

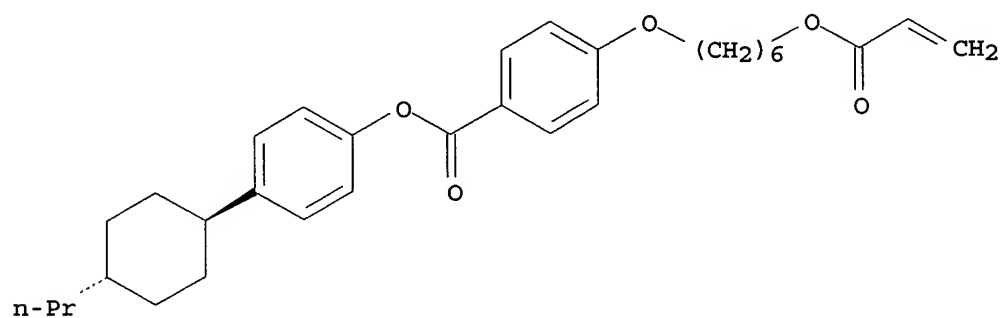
CN Benzoic acid, 4-[[6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]-,  
 4-(trans-4-propylcyclohexyl)phenyl ester, polymer with 4-cyanophenyl  
 4-[[5-[(1-oxo-2-propenyl)oxy]pentyl]oxy]benzoate and 2-methyl-1,4-  
 phenylene bis[4-[3-[(1-oxo-2-propenyl)oxy]propoxy]benzoate] (9CI) (CA  
 INDEX NAME)

CM 1

CRN 182311-45-1

CMF C31 H40 O5

Relative stereochemistry.

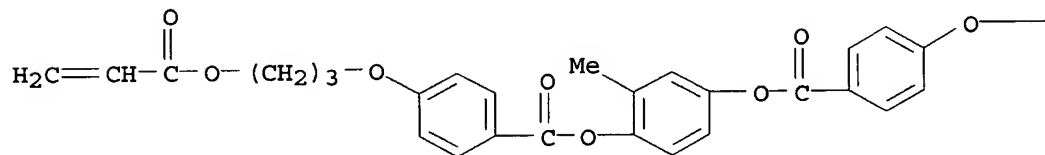


CM 2

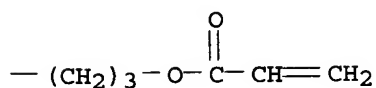
CRN 174063-87-7

CMF C33 H32 O10

PAGE 1-A

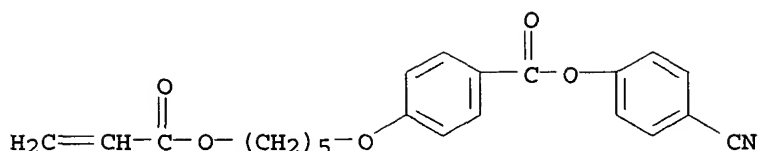


PAGE 1-B



CM 3

CRN 114383-68-5  
CMF C22 H21 N O5



IC ICM G02B005-30  
ICS G02F001-1336  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 73  
ST optical retardation film long sized polymer gelatin; elliptical polarizer liq crystal display device  
IT Polarizers  
(elliptical; elliptical optical polarizer using optical retarder and polarizing film)  
IT Liquid crystal displays  
(liq. crystal display using optical retarder comprising polymer coated with gelatin and liq. crystal)  
IT Gelatins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(optical retardation film comprising polymer film coated with gelatin and liq. crystal layers)  
IT Optical instruments  
(retarders; optical retardation film comprising polymer film coated with gelatin and liq. crystal layers)  
IT 412334-48-6P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(optical **retardation film** comprising polymer **film** coated with gelatin and liq. crystal layers)  
IT 9012-09-3, TD 80U  
RL: TEM (Technical or engineered material use); USES (Uses)  
(optical retardation film comprising polymer film coated with gelatin and liq. crystal layers)

L25 ANSWER 20 OF 44 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2002:265326 CAPLUS  
DOCUMENT NUMBER: 136:301867  
TITLE: Overcoat **film** and multilayer spacer  
**film** for liquid crystal displays  
INVENTOR(S): Saito, Manabu

KOROMA EIC1700

PATENT ASSIGNEE(S): Hitachi Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2002107535 | A2   | 20020410 | JP 2000-303643  | 20001003 |

PRIORITY APPLN. INFO.: JP 2000-303643 20001003

AB The invention relates to an overcoat **film** (or protective **film**) and a multilayer spacer **film** for liq. **crystal** displays which do not form bubbles in the overcoat layer formed over a step between a black matrix and a color pixel. The overcoat **film** comprises (1) a 1st **film**, (2) a spacer resin layer made from a **photosensitive** resin compn., (3) an overcoat resin layer made from a translucent resin, and (4) 2nd **film**, wherein the spacer resin layer has a fluidity 100-600 .mu.m.

IT 408518-94-5P, 2-Ethylhexyl acrylate-methacrylic acid-Methyl methacrylate-styrene-glycidyl methacrylate-BPE 500-trimethylhexamethylene diisocyanate-cyclohexanedimethanol-2-hydroxyethyl acrylate-APG 400 copolymer

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (overcoat **film** and multilayer spacer **film** for liq. **crystal** displays)

RN 408518-94-5 CAPLUS

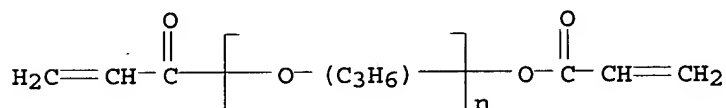
CN 2-Propenoic acid, 2-methyl-, polymer with cyclohexanedimethanol, 1,6-diisocyanatotrimethylhexane, ethenylbenzene, 2-ethylhexyl 2-propenoate, 2-hydroxyethyl 2-propenoate, .alpha., .alpha.'-[(1-methylethylidene)di-4,1-phenylene]bis[.omega.-[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl)], methyl 2-methyl-2-propenoate, oxiranylmethyl 2-methyl-2-propenoate and .alpha.-(1-oxo-2-propenyl)-.omega.-[(1-oxo-2-propenyl)oxy]poly[oxy(methyl-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

CM 1

CRN 52496-08-9

CMF (C3 H6 O)n C6 H6 O3

CCI IDS, PMS



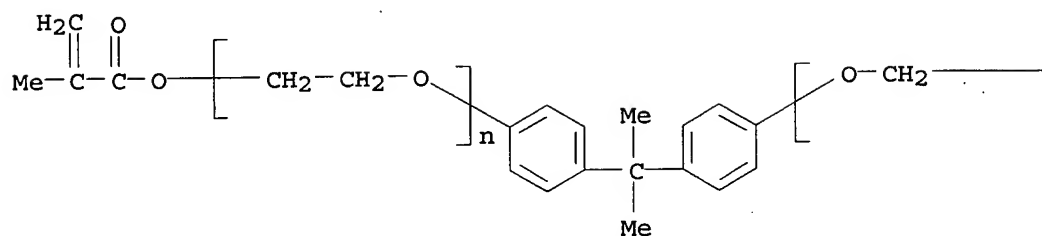
CM 2

CRN 41637-38-1

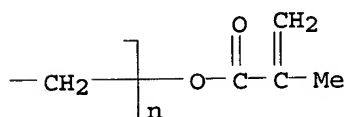
CMF (C2 H4 O)n (C2 H4 O)n C23 H24 O4

CCI PMS

PAGE 1-A



PAGE 1-B

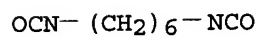


CM 3

CRN 28679-16-5

CMF C11 H18 N2 O2

CCI IDS



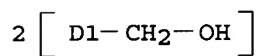
3 ( D1-Me )

CM 4

CRN 27193-25-5

CMF C8 H16 O2

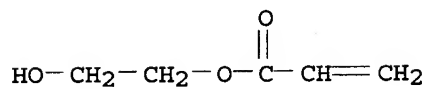
CCI IDS



CM 5

CRN 818-61-1

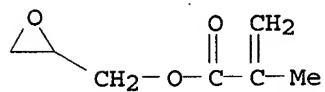
CMF C5 H8 O3



CM 6

CRN 106-91-2

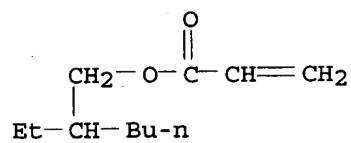
CMF C7 H10 O3



CM 7

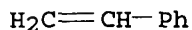
CRN 103-11-7

CMF C11 H20 O2



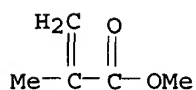
CM 8

CRN 100-42-5  
CMF C8 H8



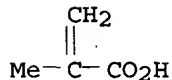
CM 9

CRN 80-62-6  
CMF C5 H8 O2



CM 10

CRN 79-41-4  
CMF C4 H6 O2



IC ICM G02B005-20  
ICS G02F001-1339; G09F009-30; G03F007-004  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 42  
ST overcoat film spacer liq crystal display  
IT Liquid crystal displays  
(overcoat film and multilayer spacer film for liq. crystal displays)  
IT 408518-94-5P, 2-Ethylhexyl acrylate-methacrylic acid-Methyl methacrylate-styrene-glycidyl methacrylate-BPE 500-trimethylhexamethylene diisocyanate-cyclohexanedimethanol-2-hydroxyethyl acrylate-APG 400 copolymer  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(overcoat film and multilayer spacer film for liq. crystal displays)  
IT 114866-51-2, HX-2000  
RL: TEM (Technical or engineered material use); USES (Uses)  
(overcoat film and multilayer spacer film for liq. crystal displays)

L25 ANSWER 21 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:253250 CAPLUS

DOCUMENT NUMBER: 136:295799

TITLE: Optical compensation sheets, method for orientation of rod-shaped **liquid-crystalline** molecules and polarizing panels of LCD devices

INVENTOR(S): Negoro, Masayuki; Kawada, Tadashi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2002098836 | A2   | 20020405 | JP 2001-97169   | 20010329 |
| US 2002048639 | A1   | 20020425 | US 2001-819804  | 20010329 |
| US 6531195    | B2   | 20030311 |                 |          |

PRIORITY APPLN. INFO.: JP 2000-91708 A 20000329  
 JP 2000-174829 A 20000612  
 JP 2000-219572 A 20000719

AB The compensation sheets are made from acrylic acid copolymers bearing C10-100 hydrocarbyl pendants, fluorohydrocarbyl pendants or cyclic structure units linking to main chain, and used in LCD devices with polarizing panels over a **liq.-cryst.** cell for improving display performance. Thus, bar coating a soln. of Et3N-neutralized copolymer of acrylic acid and acrylic acid amide compd. with 4-(phenylethynyl)aniline in a 30:70 MeOH-water mixt. on the surface of a glass panel to 1 .mu.m thickness, drying at 120.degree. for 5 min, and rubbing gave an orientation **film** which was then coated to 0.7 .mu.m thickness with a soln. of CH2:CHC(O)OC4H8O-p-C6H4C(O)O-p-C6H4OC(O)-p-C6H4OC4H8OC(O)CH:CH2 (rod-shaped **liq.-cryst** . mol.) 100, Irgacure 907 (photoinitiator) 3 and Kayacure DETX ( **photosensitizer**) 1 in MEK 400 parts, dried at 100.degree. for 1 min and irradiated with UV light to give a coated **film** with the rod-shaped **liq.-cryst.** mol. oriented in a right angle to the rubbing direction.

IT 407607-86-7P 407607-91-4P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

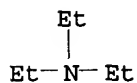
(compensation sheet former; optical compensation sheets, method for orientation of rod-shaped **liq.-cryst.** mols. and polarizing panels of LCD devices)

RN 407607-86-7 CAPLUS

CN 2-Propenoic acid, polymer with N-[4-(phenylethynyl)phenyl]-2-propenamide, compd. with N,N-diethylethanamine (9CI) (CA INDEX NAME)

CM. 1

CRN 121-44-8  
CMF C6 H15 N

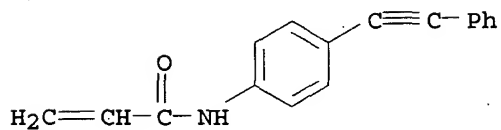


CM 2

CRN 326821-71-0  
CMF (C17 H13 N O . C3 H4 O2)x  
CCI PMS

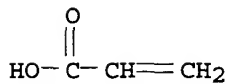
CM 3

CRN 326821-70-9  
CMF C17 H13 N O



CM 4

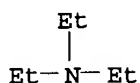
CRN 79-10-7  
CMF C3 H4 O2



RN 407607-91-4 CAPLUS  
CN 2-Propenoic acid, 2-methyl-, polymer with 4-[(2-methyl-1-oxo-2-propenyl)amino]-N-[4-(phenylethynyl)phenyl]benzamide, compd. with N,N-diethylethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 121-44-8  
CMF C6 H15 N



CM 2

CRN 407607-90-3

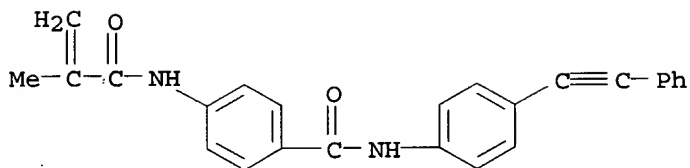
CMF (C25 H20 N2 O2 . C4 H6 O2)x

CCI PMS

CM 3

CRN 407607-89-0

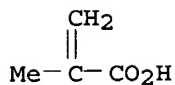
CMF C25 H20 N2 O2



CM 4

CRN 79-41-4

CMF C4 H6 O2



IT 407607-94-7P 407608-00-8P 407608-03-1P

407608-10-0P 407608-13-3P 407608-17-7P

RL: IMF (Industrial manufacture); PRP (Properties); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)

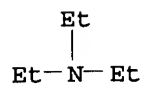
(optical compensation sheets, method for orientation of rod-shaped  
liq.-cryst. mols. and polarizing panels of LCD  
devices)

RN 407607-94-7 CAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with 2-methyl-N-[4-  
(phenylethynyl)phenyl]-2-propenamide, compd. with N,N-diethylethanamine  
(9CI) (CA INDEX NAME)

CM 1

CRN 121-44-8  
CMF C6 H15 N

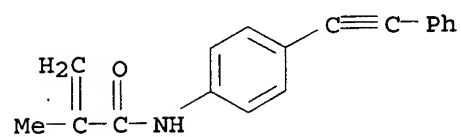


CM 2

CRN 407607-93-6  
CMF (C18 H15 N O . C4 H6 O2)x  
CCI PMS

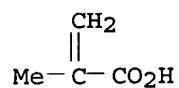
CM 3

CRN 404029-95-4  
CMF C18 H15 N O



CM 4

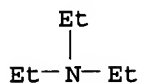
CRN 79-41-4  
CMF C4 H6 O2



RN 407608-00-8 CAPLUS  
CN 2-Propenoic acid, polymer with 4-ethenyl-1,1'-biphenyl, compd. with  
N,N-diethylethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 121-44-8  
CMF C6 H15 N



CM 2

CRN 326821-76-5

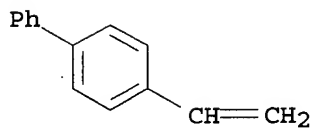
CMF (C14 H12 . C3 H4 O2)x

CCI PMS

CM 3

CRN 2350-89-2

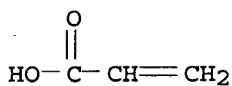
CMF C14 H12



CM 4

CRN 79-10-7

CMF C3 H4 O2



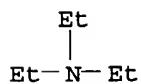
RN 407608-03-1 CAPLUS

CN 2-Propenoic acid, polymer with 9-ethenyl-9H-carbazole, compd. with N,N-diethylethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 121-44-8

CMF C6 H15 N



CM 2

CRN 50322-49-1

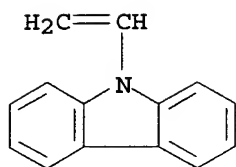
CMF (C14 H11 N . C3 H4 O2)x

CCI PMS

CM 3

CRN 1484-13-5

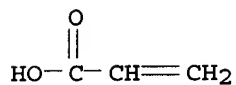
CMF C14 H11 N



CM 4

CRN 79-10-7

CMF C3 H4 O2



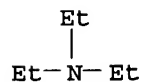
RN 407608-10-0 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propyl ester, polymer with 9-ethenylanthracene and 2-propenoic acid, compd. with N,N-diethylethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 121-44-8

CMF C6 H15 N



CM 2

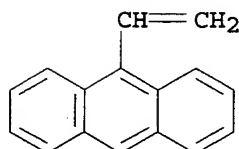
CRN 326821-79-8

CMF (C16 H12 . C10 H14 O5 . C3 H4 O2)x  
CCI PMS

CM 3

CRN 2444-68-0

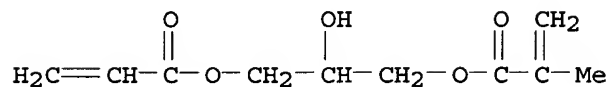
CMF C16 H12



CM 4

CRN 1709-71-3

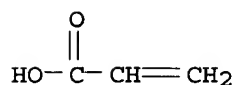
CMF C10 H14 O5



CM 5

CRN 79-10-7

CMF C3 H4 O2



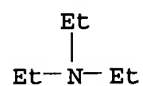
RN 407608-13-3 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[(1-oxo-2-propenyl)amino]ethyl ester, polymer with 9-ethenyl-9H-carbazole and 2-propenoic acid, compd. with N,N-diethylethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 121-44-8

CMF C6 H15 N



CM 2

CRN 326821-80-1

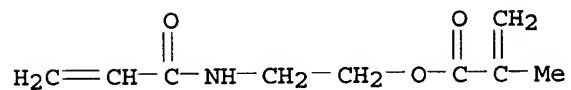
CMF (C14 H11 N . C9 H13 N O3 . C3 H4 O2)x

CCI PMS

CM 3

CRN 56148-24-4

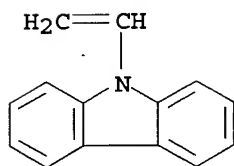
CMF C9 H13 N O3



CM 4

CRN 1484-13-5

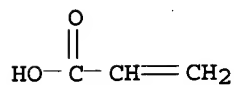
CMF C14 H11 N



CM 5

CRN 79-10-7

CMF C3 H4 O2



RN 407608-17-7 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propyl

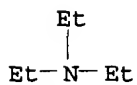
KOROMA EIC1700

ester, polymer with 9-ethenyl-9H-carbazole and 2-propenoic acid, compd.  
with N,N-diethylethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 121-44-8

CMF C6 H15 N



CM 2

CRN 326821-81-2

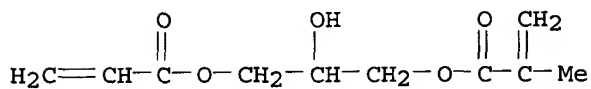
CMF (C14 H11 N . C10 H14 O5 . C3 H4 O2)x

CCI PMS

CM 3

CRN 1709-71-3

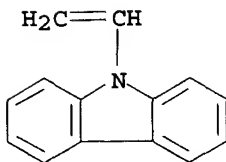
CMF C10 H14 O5



CM 4

CRN 1484-13-5

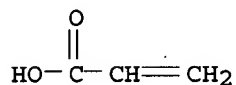
CMF C14 H11 N



CM 5

CRN 79-10-7

CMF C3 H4 O2



IT 132694-66-7 401660-99-9

RL: TEM (Technical or engineered material use); USES (Uses)  
(rod-shaped liq.-cryst. mol.; optical compensation  
sheets, method for orientation of rod-shaped liq.-  
cryst. mols. and polarizing panels of LCD devices)

RN 132694-66-7 CAPLUS

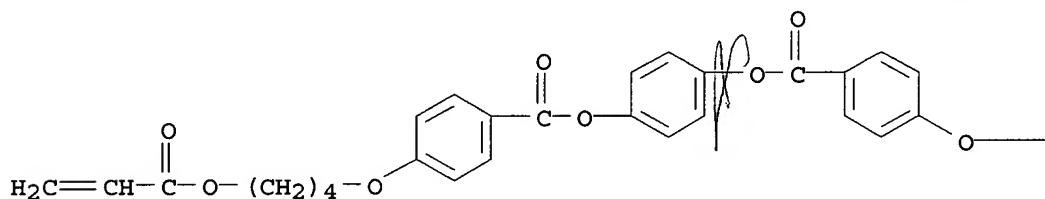
CN Benzoic acid, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]-, 1,4-phenylene ester,  
homopolymer (9CI) (CA INDEX NAME)

CM 1

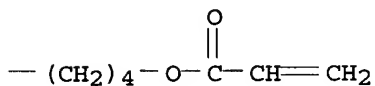
CRN 132694-65-6

CMF C34 H34 O10

PAGE 1-A



PAGE 1-B



RN 401660-99-9 CAPLUS

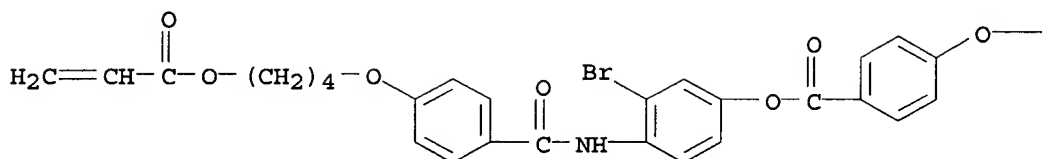
CN Benzoic acid, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]-, 3-bromo-4-[[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoyl]amino]phenyl ester, homopolymer (9CI)  
(CA INDEX NAME)

CM 1

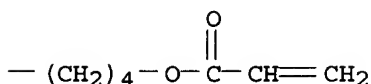
CRN 360076-77-3

CMF C34 H34 Br N O9

PAGE 1-A



PAGE 1-B



- IC ICM G02B005-30  
ICS C08F220-04; G02F001-1337
- CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 76
- ST LCD device polarizing panel optical compensation sheet acrylic copolymer;  
rod shaped liq cryst compd orientation optical  
compensation sheet
- IT **Liquid crystal displays**  
**Polarizing films**  
(optical compensation sheets, method for orientation of rod-shaped  
liq.-cryst. mols. and polarizing panels of LCD  
devices)
- IT 407607-86-7P 407607-91-4P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)  
(compensation sheet former; optical compensation sheets, method for  
orientation of rod-shaped liq.-cryst. mols. and  
polarizing panels of LCD devices)
- IT 407607-94-7P 407607-97-0P 407608-00-8P  
407608-03-1P 407608-07-5P 407608-10-0P  
407608-13-3P 407608-17-7P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)  
(optical compensation sheets, method for orientation of rod-shaped  
liq.-cryst. mols. and polarizing panels of LCD  
devices)
- IT 132694-66-7 401660-99-9  
RL: TEM (Technical or engineered material use); USES (Uses)  
(rod-shaped liq.-cryst. mol.; optical compensation  
sheets, method for orientation of rod-shaped liq.-  
cryst. mols. and polarizing panels of LCD devices)

L25 ANSWER 22 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:236278 CAPLUS

DOCUMENT NUMBER: 136:286681

TITLE: Manufacture of of birefringent films for liquid crystal display with enlarged viewing angle

INVENTOR(S): Tsai, Wei Min; Uetsuki, Masao; Kawatsuki, Yoshihiro

PATENT ASSIGNEE(S): Hayashi Telempu Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2002090540          | A2   | 20020327 | JP 2000-282917  | 20000919 |
| PRIORITY APPLN. INFO.: |      |          | JP 2000-282917  | 20000919 |

AB The process comprises laminating .gtoreq.2 layers **photosensitive** side-chain type polymer **films** and irradiating with linear polarized UV rays to tilt the light axis to any direction.  
 CH<sub>2</sub>:CMeCO<sub>2</sub>(CH<sub>2</sub>)<sub>6</sub>OC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>O(CH<sub>2</sub>)<sub>2</sub>CO<sub>2</sub>CH:CHC<sub>6</sub>H<sub>4</sub>OMe was prepd., polymd. in THF with AIBN, dissolved in CHCl<sub>3</sub>, spin coated on an isotropic base board, irradiated with polarized UV while tilting the base 30.degree. for 20 s, the process repeated until 20 layers was accumulated, and heated 10 min at 100.degree. to give a laminate showing phase difference 85 nm.

IT 227204-31-1P 230296-11-4P

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(manuf. of of birefringent **films** for liq. crystal display with enlarged viewing angle)

RN 227204-31-1 CAPLUS

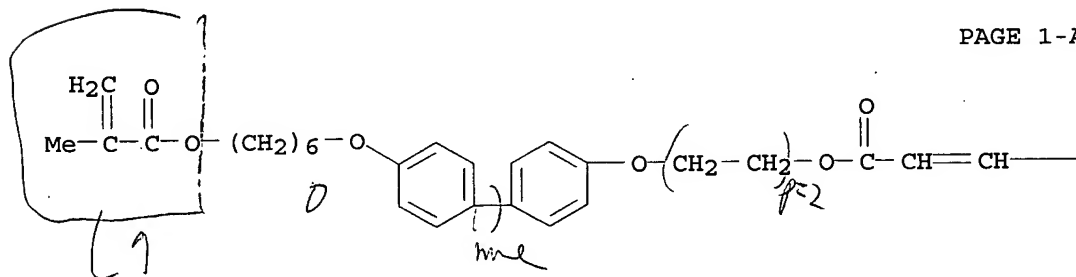
CN 2-Propenoic acid, 2-methyl-, 6-[[4'-[2-[[3-(4-methoxyphenyl)-1-oxo-2-propenyl]oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 227204-27-5

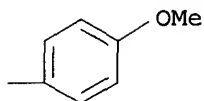
CMF C34 H38 O7

PAGE 1-A



KOROMA EIC1700

PAGE 1-B



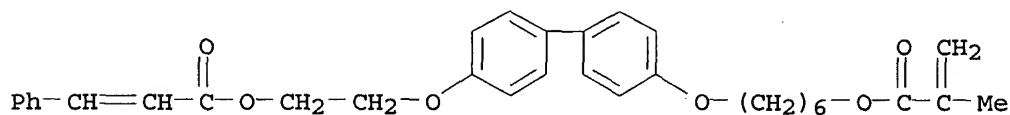
RN 230296-11-4 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[(4'-cyano[1,1'-biphenyl]-4-yl)oxy]hexyl ester, polymer with 6-[[4'-[2-[(1-oxo-3-phenyl-2-propenyl)oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 199534-66-2

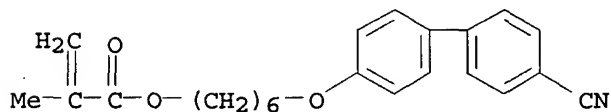
CMF C33 H36 O6



CM 2

CRN 117318-91-9

CMF C23 H25 N O3



IC ICM G02B005-30

ICS B32B007-02; C08F020-30; C08J007-00; B29D011-00; C08L033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST birefringent film liq crystal display

viewing angle; polarized UV irradiation photosensitive acrylic polymer

IT Optical films

(birefringent; manufacture of birefringent films for liq. crystal display with enlarged viewing angle)

IT Laminated plastic films

Liquid crystal displays

KOROMA EIC1700

(manuf. of of birefringent films for liq.  
crystal display with enlarged viewing angle)

IT UV radiation

(polarized, irradiation with; manuf. of of birefringent films for  
liq. crystal display with enlarged viewing angle)

IT 227204-31-1P 230296-11-4P

RL: IMF (Industrial manufacture); PEP (Physical, engineering or  
chemical process); TEM (Technical or engineered material use); PREP  
(Preparation); PROC (Process); USES (Uses)

(manuf. of of birefringent films for liq.  
crystal display with enlarged viewing angle)

IT 117318-91-9P 199534-66-2P 227204-27-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)

(manuf. of of birefringent films for liq.  
crystal display with enlarged viewing angle)

L25 ANSWER 23 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:205085 CAPLUS

DOCUMENT NUMBER: 136:254634

TITLE: Optically reactive and optically active isomannide  
derivative, its use as optically reactive chiral  
agent, liquid crystal composition  
containing it, liquid crystal  
color filter, optical film, and optical  
recording medium containing the compound, and changing  
twisting of liquid crystal using  
the compound

INVENTOR(S): Sugiyama, Takekatsu; Ichihashi, Mitsuyoshi; Hayashi,  
Keiichiro

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

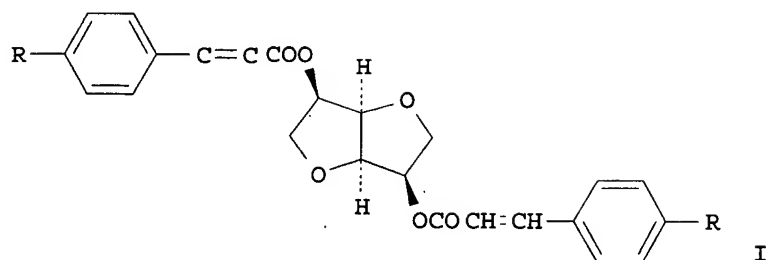
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE       |
|------------------------|------|----------|-----------------|------------|
| JP 2002080478          | A2   | 20020319 | JP 2001-5741    | 20010112   |
| US 2002033479          | A1   | 20020321 | US 2001-887335  | 20010625   |
| PRIORITY APPLN. INFO.: |      |          | JP 2000-193143  | A 20000627 |
|                        |      |          | JP 2000-193142  | A 20000627 |
|                        |      |          | JP 2001-5740    | A 20010112 |
|                        |      |          | JP 2001-5741    | A 20010112 |

OTHER SOURCE(S): MARPAT 136:254634

GI



AB The compd. working as an optically reactive chiral agent comprises an isomannide deriv. I (R = H, C1-15 alkoxy, C3-15 acryloyloxyalkyloxy, C4-15 methacryloyloxyalkyloxy), which changes twisting of liq. crystals by irradiation of light. The liq. crystal compn., liq. crystal color filter, optical film, and optical recording medium contain I. The orientation of liq. crystal compn. is easily controlled with photosensitive compd. by irradiation of light to give color filters with high color purity and wide color variation.

IT 404595-76-2P

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(optically reactive isomannide deriv. chiral agent for changing twisting of liq. crystals in color filters, optical films, and optical recording medium)

RN 404595-76-2 CAPLUS

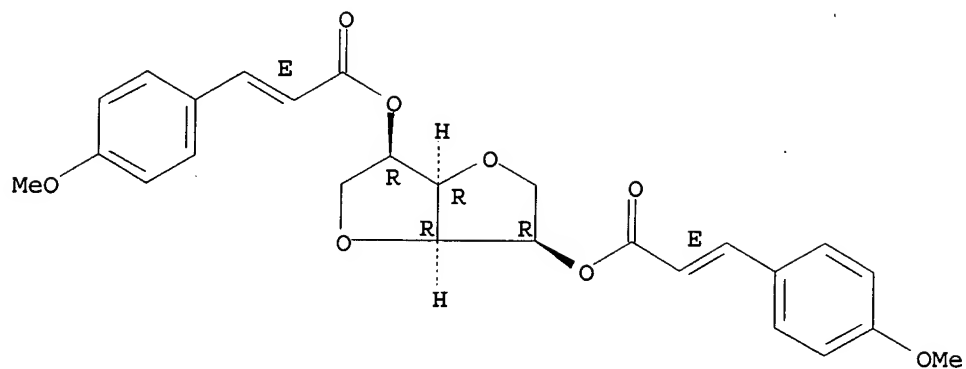
CN D-Glucitol, 1,4:3,6-dianhydro-, bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], polymer with 1,4:3,6-dianhydro-D-mannitol bis[(2E)-3-(4-methoxyphenyl)-2-propenoate], 2,6-naphthalenediyl bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and 1,4-phenylene bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate] (9CI) (CA INDEX NAME)

CM 1

CRN 404929-56-2

CMF C26 H26 O8

Absolute stereochemistry.  
Double bond geometry as shown.

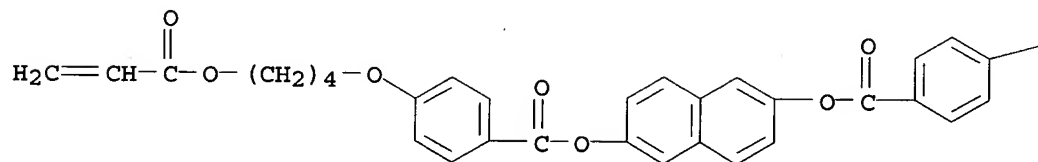


CM 2

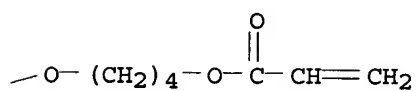
CRN 339588-79-3

CMF C38 H36 O10

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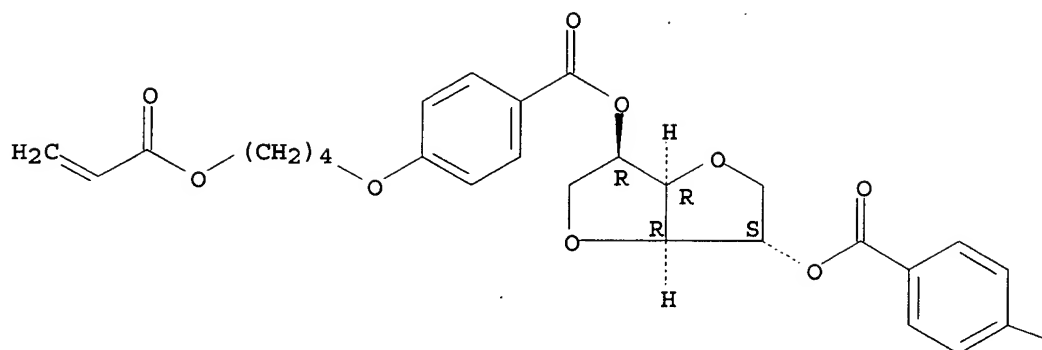
CM 3

CRN 250230-59-2

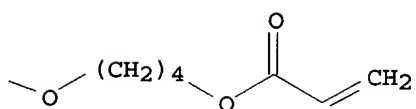
CMF C34 H38 O12

Absolute stereochemistry.

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PAGE 1-B

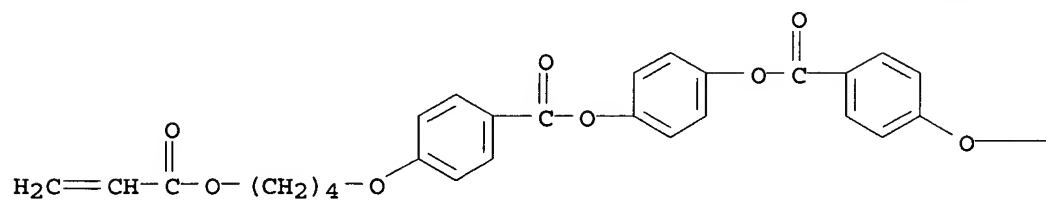


CM 4

CRN 132694-65-6

CMF C34 H34 O10

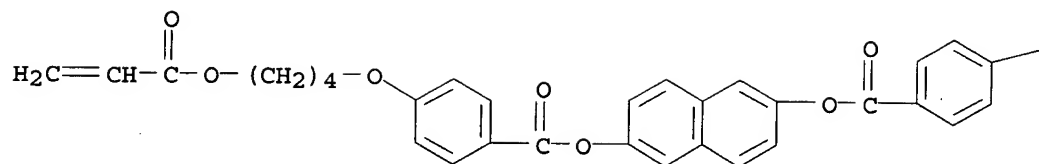
PAGE 1-A



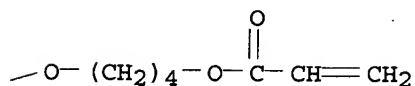
KOROMA EIC1700



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PAGE 1-B

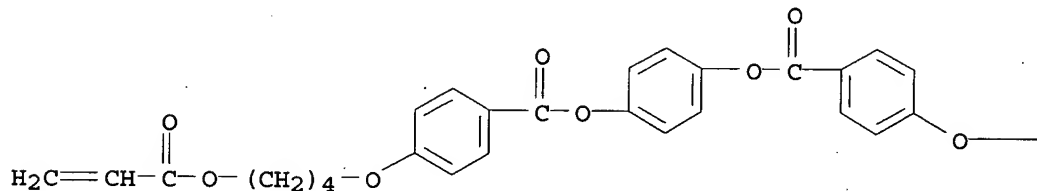


CM 2

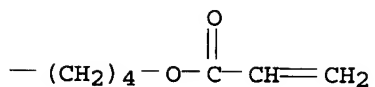
CRN 132694-65-6

CMF C34 H34 O10

PAGE 1-A



PAGE 1-B



IC ICM C07D493-04  
 ICS C09K019-34; C09K019-54; G02B005-20; G02B005-30; G02F001-13;  
 G02F001-1335; G02F001-139; G03C001-73; C07M007-00  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 28, 73, 75  
 ST optical reactive chiral agent liq crystal twisting  
 change; color filter recording medium optical reactive chiral agent;

KOROMA EIC1700

- isomannide phenylcinnamyl chiral agent liq crystal
- IT Optical reflectors  
(circularly polarized light; optically reactive isomannide deriv.  
chiral agent for changing twisting of liq. crystals  
in color filters, optical films, and optical recording  
medium)
- IT Optical filters  
(liq.-crystal; optically reactive isomannide deriv.  
chiral agent for changing twisting of liq. crystals  
in color filters, optical films, and optical recording  
medium)
- IT Optical films  
Optical recording materials  
(optically reactive isomannide deriv. chiral agent for changing  
twisting of liq. crystals in color filters, optical  
films, and optical recording medium)
- IT Optical instruments  
(retarders; optically reactive isomannide deriv. chiral agent for  
changing twisting of liq. crystals in color  
filters, optical films, and optical recording medium)
- IT 404595-76-2P  
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP  
(Preparation); USES (Uses)  
(optically reactive isomannide deriv. chiral agent for changing  
twisting of liq. crystals in color filters, optical  
films, and optical recording medium)
- IT 404595-71-7P 404929-59-5P  
RL: DEV (Device component use); PNU (Preparation, unclassified); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)  
(optically reactive isomannide deriv. chiral agent for changing  
twisting of liq. crystals in color filters, optical  
films, and optical recording medium)
- IT 404929-57-3 404929-58-4  
RL: DEV (Device component use); TEM (Technical or engineered material  
use); USES (Uses)  
(optically reactive isomannide deriv. chiral agent for changing  
twisting of liq. crystals in color filters, optical  
films, and optical recording medium)
- IT 55379-98-1P, 4-Decyloxycinnamic acid  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(optically reactive isomannide deriv. chiral agent for changing  
twisting of liq. crystals in color filters, optical  
films, and optical recording medium)
- IT 339588-80-6P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(optically reactive isomannide deriv. chiral agent for changing  
twisting of liq. crystals in color filters, optical  
films, and optical recording medium)
- IT 79-37-8, Oxalyl chloride 501-98-4, trans-4-Coumaric acid 641-74-7,

Isomannide 830-09-1, 4-Methoxycinnamic acid 2050-77-3, 1-Iododecane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (optically reactive isomannide deriv. chiral agent for changing  
 twisting of liq. crystals in color filters, optical  
 films, and optical recording medium)

IT 3712-60-5 31701-42-5 66230-67-9, ZLI 1132  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (optically reactive isomannide deriv. chiral agent for changing  
 twisting of liq. crystals in color filters, optical  
 films, and optical recording medium)

L25 ANSWER 24 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:932727 CAPLUS

DOCUMENT NUMBER: 136:61600

TITLE: Manufacture of liquid crystal  
 orientation film, liquid  
 crystal display, and manufacture thereof  
 INVENTOR(S): Otake, Tadashi; Ogawa, Kazufumi; Nomura, Yukio;  
 Takebe, Naoko; Uemura, Tsuyoshi; Kawaguri, Mariko;  
 Nakao, Kenji

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

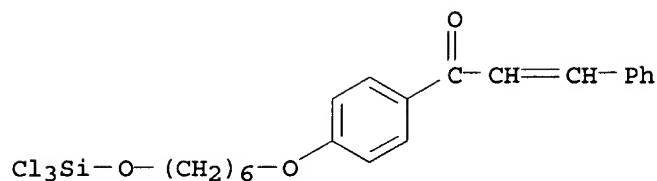
PATENT INFORMATION:

| PATENT NO.                                                                                                                                                                                                                                                                                                                                                                                                                                         | KIND | DATE     | APPLICATION NO. | DATE     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-----------------|----------|
| JP 2001356348                                                                                                                                                                                                                                                                                                                                                                                                                                      | A2   | 20011226 | JP 2000-179269  | 20000615 |
| PRIORITY APPLN. INFO.:                                                                                                                                                                                                                                                                                                                                                                                                                             |      |          | JP 2000-179269  | 20000615 |
| AB The process comprises exposure of light a liq. crystal<br>orientation polymer film having a photosensitive group<br>formed on a transparent substrate through the substrate or the side of<br>substrate. The polymer film has polyvinyl, polysiloxane, and/or<br>polyimide in the backbone chain. The process ia able to orient the<br>film without exposing to air for a long time, thereby reducing<br>contamination of the orientation film. |      |          |                 |          |
| IT 382162-41-6P                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |          |                 |          |
| RL: DEV (Device component use); PNU (Preparation, unclassified); PREP<br>(Preparation); USES (Uses)<br>(liq. crystal orientation polymer film)                                                                                                                                                                                                                                                                                                     |      |          |                 |          |
| RN 382162-41-6 CAPLUS                                                                                                                                                                                                                                                                                                                                                                                                                              |      |          |                 |          |
| CN 2-Propen-1-one, 3-phenyl-1-[4-[[6-[(trichlorosilyl)oxy]hexyl]oxy]phenyl]-,<br>homopolymer, hydrolytic (9CI) (CA INDEX NAME)                                                                                                                                                                                                                                                                                                                     |      |          |                 |          |

CM 1

CRN 242811-40-1

CMF C21 H23 Cl3 O3 Si



CM 2

CRN 7732-18-5

CMF H2 O

H<sub>2</sub>O

IC ICM G02F001-1337  
ICS G02F001-1337; G02F001-1335; G02F001-1341  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38  
ST **liq crystal orientation film** light exposure;  
display **liq crystal**  
IT **Liquid crystal** displays  
(**liq. crystal orientation polymer film**)  
IT Polyimides, uses  
Polysiloxanes, uses  
RL: DEV (Device component use); USES (Uses)  
(**liq. crystal orientation polymer film**)  
IT Vinyl compounds, uses  
RL: DEV (Device component use); USES (Uses)  
(polymers; **liq. crystal orientation polymer**  
**film**)  
IT 382162-41-6P  
RL: DEV (Device component use); PNU (Preparation, unclassified); **PREP**  
(**Preparation**); USES (Uses)  
(**liq. crystal orientation polymer film**)

L25 ANSWER 25 OF 44 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2001:299090 CAPLUS  
DOCUMENT NUMBER: 134:334331  
TITLE: **Liquid crystal-alignment**  
**film and its preparation**  
INVENTOR(S): Sakai, Takeya; Kawatsuki, Yoshihiro  
PATENT ASSIGNEE(S): Hayashi Telempu Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese

KOROMA EIC1700

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2001117102          | A2   | 20010427 | JP 1999-300455  | 19991022 |
| PRIORITY APPLN. INFO.: |      |          | JP 1999-300455  | 19991022 |

AB The alignment film is prep'd. by (1) applying a polymer capable of photoinduced orientation on a substrate, and (2) irradiating an UV contg. both the complete and incomplete polarized light onto the polymer to obtain liq. crystal-alignment ability. The polymer may be anisotropically dimerized by the UV radiation. The polymer may have a side chain selected from (substituted) .beta.-(2-furyl)acryloyl, cinnamoyl, and cinnamylideneacetoyl groups. The polymer may have a main chain of a polyacrylate, polymethacrylate, polysiloxane, etc. Large alignment film can be manuf'd. by the method in high productivity. Thus, 4-Hydroxyethoxy-4'-(6'-biphenyloxyhexyl) methacrylate cinnamate homopolymer was applied on a substrate coated with an ITO, then nonpolar UV was irradiated onto the polymer via a declinedly arranged quartz plate to form an alignment film. A TN liq. crystal cell using the alignment film was manuf'd.

IT 229617-68-9P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(in prepn. of liq. crystal-alignment film

by irradiating UV of low polarization degree onto polymer capable of photoinduced dimerization or orientation)

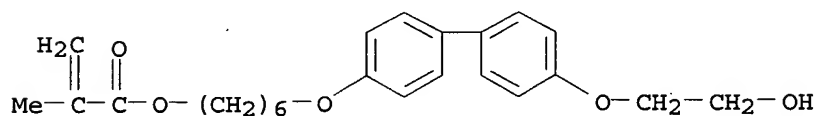
RN 229617-68-9 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-(2-hydroxyethoxy)[1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 183234-70-0

CMF C24 H30 O5



IT 199534-67-3P 326804-33-5P, 4-(2-Hydroxyethoxy)-4'-(6'-biphenyloxyhexyl) methacrylate homopolymer .beta.-(2-furyl) acrylate ester 336130-01-9P, 4-(2-Hydroxyethoxy)-4'-(6'-biphenyloxyhexyl) methacrylate homopolymer cinnamylideneacetate ester 336130-02-0P, 4-(2-Hydroxyethoxy)-4'-(6'-biphenyloxyhexyl) methacrylate homopolymer .alpha.-cyanocinnamylideneacetate ester

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and dimerization; in prepn. of liq. crystal

KOROMA EIC1700

-alignment film by irradiating UV of low polarization degree  
onto polymer capable of photoinduced dimerization or orientation)

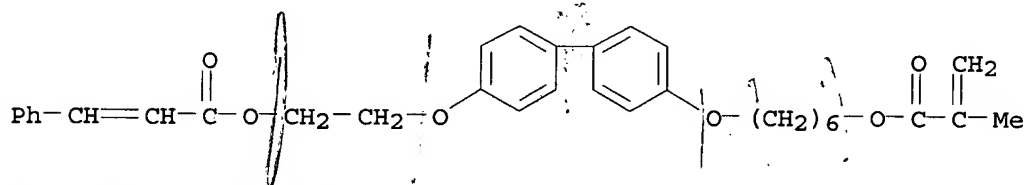
RN 199534-67-3 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-[2-[(1-oxo-3-phenyl-2-propenyl)oxy]ethoxy][1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 199534-66-2

CMF C33 H36 O6



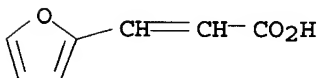
RN 326804-33-5 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-(2-hydroxyethoxy)[1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer, 3-(2-furanyl)-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 539-47-9

CMF C7 H6 O3



CM 2

CRN 229617-68-9

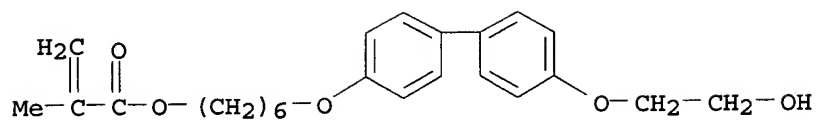
CMF (C24 H30 O5)x

CCI PMS

CM 3

CRN 183234-70-0

CMF C24 H30 O5



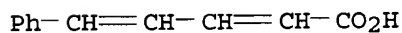
RN 336130-01-9 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-(2-hydroxyethoxy)[1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer, 5-phenyl-2,4-pentadienoate (9CI) (CA INDEX NAME)

CM 1

CRN 1552-94-9

CMF C11 H10 O2



CM 2

CRN 229617-68-9

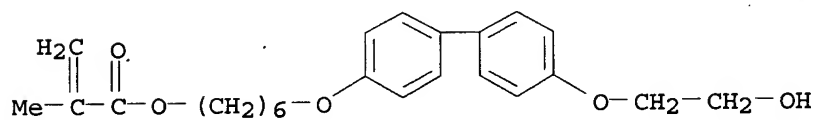
CMF (C<sub>24</sub> H<sub>30</sub> O<sub>5</sub>)<sub>x</sub>

CCI PMS

CM 3

CRN 183234-70-0

CMF C<sub>24</sub> H<sub>30</sub> O<sub>5</sub>



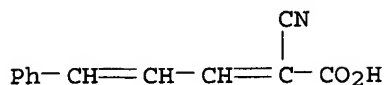
RN 336130-02-0 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[[4'-(2-hydroxyethoxy)[1,1'-biphenyl]-4-yl]oxy]hexyl ester, homopolymer, 2-cyano-5-phenyl-2,4-pentadienoate (9CI) (CA INDEX NAME)

CM 1

CRN 24139-57-9

CMF C<sub>12</sub> H<sub>9</sub> N O<sub>2</sub>



CM 2

CRN 229617-68-9

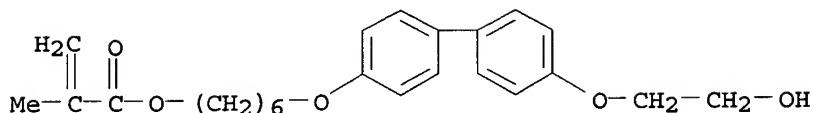
CMF (C24 H30 O5)x

CCI PMS

CM 3

CRN 183234-70-0

CMF C24 H30 O5



IC ICM G02F001-1337

ICS C08J003-28; C08L101-02

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37, 38

ST **liq crystal alignment film**

**photosensitive polymer; photoinduced dimerization polymer**

**alignment film liq crystal; orientation**

**photoinduced polymer alignment film liq**

**crystal; polyacrylate photopolymer liq crystal**

**alignment film; polysiloxane photosensitive**

**liq crystal alignment film**

IT UV radiation

(low polarization degree; prepn. of **liq. crystal**

-alignment film by irradiating UV of low polarization degree

onto polymer capable of photoinduced dimerization or orientation)

IT Polymers, preparation

Polysiloxanes, preparation

RL: DEV (Device component use); IMF (Industrial manufacture);

PREP (Preparation); USES (Uses)

(photoinduced dimerized or oriented, alignment film; prepn.

of **liq. crystal-alignment film** by

irradiating UV of low polarization degree onto polymer capable of

photoinduced dimerization or orientation)

IT Dimerization

(**photosensitive polymer; prepn. of liq.**

**crystal-alignment film** by irradiating UV of low

KOROMA EIC1700

polarization degree onto polymer capable of photoinduced dimerization or orientation)

IT 20689-54-7P, .beta.-(2-Furyl)acrylic acid chloride 40926-86-1P

183234-53-9P 183234-59-5P 199534-66-2P 229617-68-9P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP

(Preparation); RACT (Reactant or reagent)

(in prepn. of liq. crystal-alignment film

by irradiating UV of low polarization degree onto polymer capable of photoinduced dimerization or orientation)

IT 92-88-6, 4,4'-Biphenyldiol 102-92-1, Cinnamoyl chloride 107-07-3,

2-Chloroethanol, reactions 629-03-8, 1,6-Dibromohexane 13234-23-6,

Lithium methacrylate 25519-47-5 183234-70-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(in prepn. of liq. crystal-alignment film

by irradiating UV of low polarization degree onto polymer capable of photoinduced dimerization or orientation)

IT 199534-67-3P 326804-33-5P, 4-(2-Hydroxyethoxy)-4'-(6'-

biphenyloxyhexyl) methacrylate homopolymer .beta.-(2-furyl) acrylate ester

336130-01-9P, 4-(2-Hydroxyethoxy)-4'-(6'-biphenyloxyhexyl)

methacrylate homopolymer cinnamylideneacetate ester 336130-02-0P

, 4-(2-Hydroxyethoxy)-4'-(6'-biphenyloxyhexyl) methacrylate homopolymer

.alpha.-cyanocinnamylideneacetate ester

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP

(Preparation); RACT (Reactant or reagent)

(prepn. and dimerization; in prepn. of liq. crystal

-alignment film by irradiating UV of low polarization degree

onto polymer capable of photoinduced dimerization or orientation)

L25 ANSWER 26 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:180898 CAPLUS

DOCUMENT NUMBER: 134:223749

TITLE: Manufacture of light polarization and diffraction devices using cholesteric liquid crystal films

INVENTOR(S): Nishimura, Ryo

PATENT ASSIGNEE(S): Nisseki Mitsubishi K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND              | DATE     | APPLICATION NO. | DATE     |
|------------------------|-------------------|----------|-----------------|----------|
| JP 2001066431          | A2                | 20010316 | JP 1999-238992  | 19990825 |
| PRIORITY APPLN. INFO.: |                   |          | JP 1999-238992  | 19990825 |
| OTHER SOURCE(S):       | MARPAT 134:223749 |          |                 |          |

AB The title devices useful for optical instruments are manufd. by: (1) forming a cholesteric liq. crystal film (A) on a substrate film from a compn. contg.

CH2:CR1CO2(CH2)aOXCO2ZO2CXO(CH2)bO2CCR2:CH2 (R1, R2 = H, Me; X =

p-phenylene; Z = p-phenylene optionally bearing 1 halogen, lower alkyl, methoxy, CN or nitro group on ortho position; a, b = 2-12), CH<sub>2</sub>:CR<sub>3</sub>CO<sub>2</sub>(CH<sub>2</sub>)<sub>c</sub>OXCO<sub>2</sub>XCN (R<sub>3</sub> = H, Me; X = p-phenylene; c = 2-12) and an optically-active low mol. wt. compd., (2) crosslinking the liq. crystal mols. with a cholesteric orientation in A under UV light, and (3) giving A with diffraction gratings by transfer technique. One example of A was obtained by coating a mixt. of methylhydroquinone bis[4-(6-acryloyloxyhexyloxy)benzoate] (prepn. given) 7.0, 4-cyanophenol 4-(6-acryloyloxyhexyloxy)benzoate (prepn. given) 1.07, S 811 (a chiral dopant liq. crystal) 1.93, Irgacure 907 (a photoinitiator) 0.3, and di-Et thioxanthone (a photosensitizer) 0.1 in N-methylpyrrolidone 90 g on a polyethylene naphthalate film

IT 304436-00-8 312633-23-1

RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (manuf. of polarized light diffraction components from cholesteric liq. crystal films)

RN 304436-00-8 CAPLUS

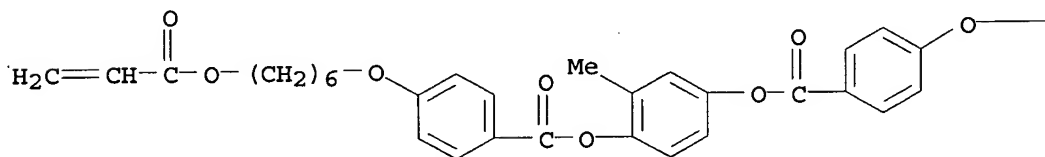
CN Benzoic acid, 4-[[6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]-, 2-methyl-1,4-phenylene ester, polymer with 4-cyanophenyl 4-[[6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]benzoate (9CI) (CA INDEX NAME)

CM 1

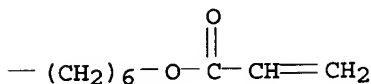
CRN 125248-71-7

CMF C39 H44 O10

PAGE 1-A



PAGE 1-B

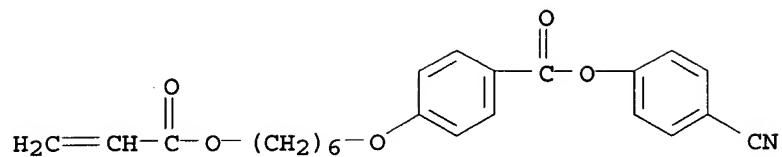


CM 2

CRN 83847-14-7

CMF C23 H23 N O5

KOROMA EIC1700



RN 312633-23-1 CAPLUS

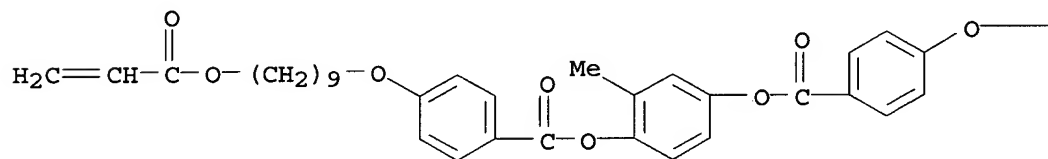
CN Benzoic acid, 4-[[9-[(1-oxo-2-propenyl)oxy]nonyl]oxy]-, 2-methyl-1,4-phenylene ester, polymer with 4-cyanophenyl 4-[3-[(1-oxo-2-propenyl)oxy]propoxy]benzoate (9CI) (CA INDEX NAME)

CM 1

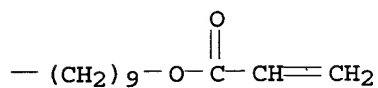
CRN 312633-22-0

CMF C45 H56 O10

PAGE 1-A



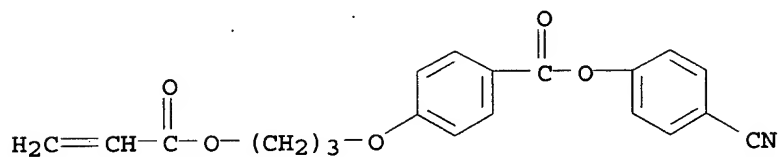
PAGE 1-B



CM 2

CRN 135595-69-6

CMF C20 H17 N O5



IC ICM G02B005-30

ICS C08F002-46; C08F220-10; C09K019-20; C09K019-54; G02B005-18

KOROMA EIC1700

- CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 73, 75
- ST arom ester cholesteric liq crystal film  
manuf; cyanophenyl benzoate cholesteric liq crystal  
film manuf; light polarization diffraction device liq  
crystal film; polyethylene naphthalate film  
light polarization diffraction device
- IT Liquid crystals  
(cholesteric, low mol. wt.; manuf. of polarized light diffraction  
components from cholesteric liq. crystal  
films)
- IT Liquid crystals, polymeric  
(cholesteric; manuf. of polarized light diffraction components from  
cholesteric liq. crystal films)
- IT Optical diffraction  
(device; manuf. of polarized light diffraction components from  
cholesteric liq. crystal films)
- IT Liquid crystals  
(films, cholesteric; manuf. of polarized light diffraction  
components from cholesteric liq. crystal  
films)
- IT Films  
(liq.-crystal, cholesteric; manuf. of polarized  
light diffraction components from cholesteric liq.  
crystal films)
- IT Polarizers  
(manuf. of polarized light diffraction components from cholesteric  
liq. crystal films)
- IT 312694-11-4P  
RL: DEV (Device component use); IMF (Industrial manufacture);  
TEM (Technical or engineered material use); PREP (Preparation);  
USES (Uses)  
(low mol. wt. liq. crystal compd.; manuf. of  
polarized light diffraction components from cholesteric liq.  
crystal films)
- IT 87321-20-8, S 811  
RL: DEV (Device component use); TEM (Technical or engineered material  
use); USES (Uses)  
(low mol. wt. liq. crystal compd.; manuf. of  
polarized light diffraction components from cholesteric liq.  
crystal films)
- IT 304436-00-8 312633-23-1  
RL: DEV (Device component use); POF (Polymer in formulation); PRP  
(Properties); TEM (Technical or engineered material use); USES (Uses)  
(manuf. of polarized light diffraction components from cholesteric  
liq. crystal films)
- IT 71868-10-5, Irgacure 907  
RL: CAT (Catalyst use); USES (Uses)  
(photoinitiator; manuf. of polarized light diffraction components from  
cholesteric liq. crystal films)
- IT 100752-97-4, Diethyl thioxanthone  
RL: CAT (Catalyst use); USES (Uses)

(photosensitizer; manuf. of polarized light diffraction components from cholesteric liq. crystal films)

IT 95-71-6, Methylhydroquinone 83883-26-5, 4-(6-Acryloyloxyhexyloxy)benzoic acid

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactant for liq. crystal compd.; manuf. of polarized light diffraction components from cholesteric liq. crystal films)

IT 2493-84-7, Octyloxybenzoic acid 18531-99-2, (s)-(-)-1,1'-Bi-2-Naphthol

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactant for low mol. wt. liq. crystal compd.; manuf. of polarized light diffraction components from cholesteric liq. crystal films)

IT 767-00-0, 4-Cyanophenol

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactant for non-liq. crystal compd.; manuf. of polarized light diffraction components from cholesteric liq. crystal films)

IT 9020-32-0, Poly(ethylene naphthalate) monomer based 9020-73-9, Polyethylene naphthalate

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(substrate film; manuf. of polarized light diffraction components from cholesteric liq. crystal films)

IT 9016-75-5, Poly(phenylene sulfide)

RL: TEM (Technical or engineered material use); USES (Uses)  
(substrate film; manuf. of polarized light diffraction components from cholesteric liq. crystal films)

L25 ANSWER 27 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:54328 CAPLUS

DOCUMENT NUMBER: 134:123656

TITLE: Liquid crystal alignment agent, chiral nematic liquid crystal color filter, and formation of the filter  
INVENTOR(S): Nigorikawa, Kazunori; Ichihashi, Mitsuyoshi  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

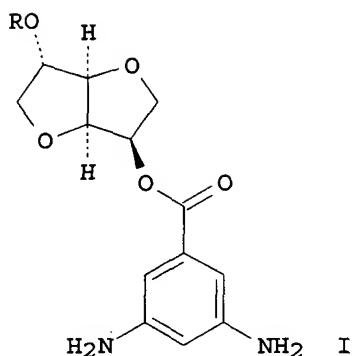
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2001019766          | A2   | 20010123 | JP 1999-190419  | 19990705 |
| PRIORITY APPLN. INFO.: |      |          | JP 1999-190419  | 19990705 |

GI

KOROMA EIC1700



AB The liq. crystal alignment agent is made of polyimide prepd. from 3,5-diaminobenzoate ester I (R = alkyl, alkanoyl, benzoyl) and tetracarboxylic dianhydride. The color filter has a film made of the liq. crystal alignment agent on a transparent substrate and a photosensitive resin layer contg. a chiral nematic liq. crystal on the alignment layer. The color filter is manufd. by transferring the photosensitive layer on the liq. crystal-alignment film. The chiral nematic liq. crystal is uniformly aligned in the horizontal direction in the color filter.

IT 320750-52-5

RL: DEV (Device component use); USES (Uses)

(manuf. of color filter by transferring photosensitive resin contg. chiral nematic liq. crystal on polyimide alignment layer)

RN 320750-52-5 CAPLUS

CN D-Glucitol, 1,4:3,6-dianhydro-, bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], polymer with 1,4-phenylene bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate] (9CI) (CA INDEX NAME)

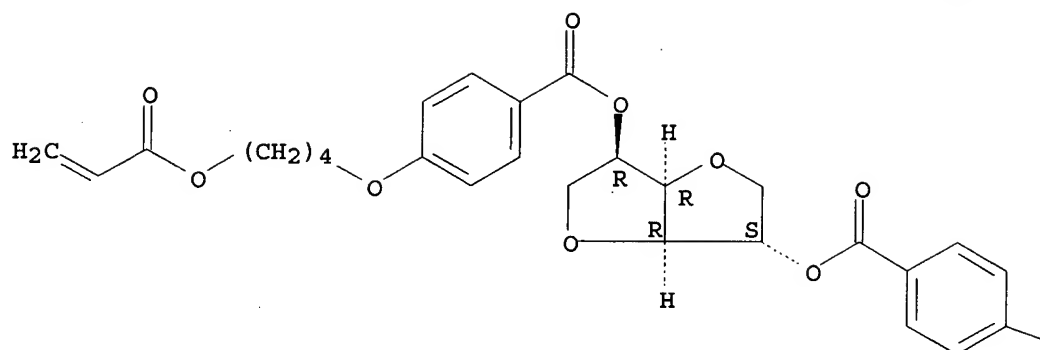
CM 1

CRN 250230-59-2

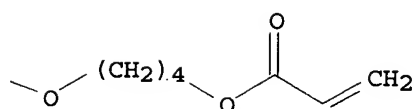
CMF C34 H38 O12

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

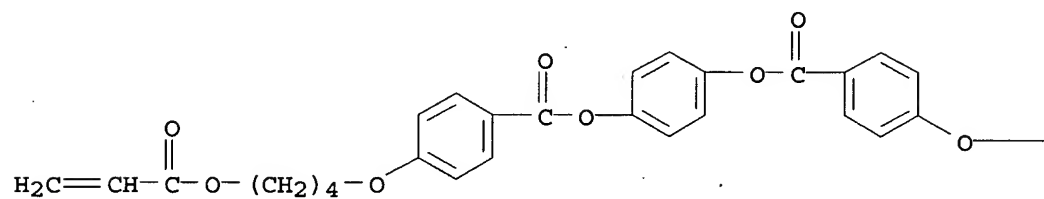


CM 2

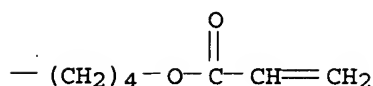
CRN 132694-65-6

CMF C34 H34 O10

PAGE 1-A



KOROMA EIC1700



- IC ICM C08G073-10  
ICS G02F001-1337
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 75
- ST **liq crystal** alignment agent color filter; chiral  
nematic **liq crystal** color filter; uniform horizontal  
alignment **liq crystal** filter
- IT Polyimides, uses  
RL: DEV (Device component use); USES (Uses)  
(arom.; manuf. of color filter by transferring **photosensitive**  
resin contg. chiral nematic **liq. crystal** on  
polyimide alignment layer)
- IT **Liquid crystals**  
(cholesteric; manuf. of color filter by transferring  
**photosensitive** resin contg. chiral nematic **liq.**  
**crystal** on polyimide alignment layer)
- IT Optical filters  
Transfers  
(manuf. of color filter by transferring **photosensitive** resin  
contg. chiral nematic **liq. crystal** on polyimide  
alignment layer)
- IT 320750-52-5  
RL: DEV (Device component use); USES (Uses)  
(manuf. of color filter by transferring **photosensitive** resin  
contg. chiral nematic **liq. crystal** on polyimide  
alignment layer)
- IT 320750-50-3P  
RL: DEV (Device component use); **IMF** (Industrial manufacture);  
**PREP** (Preparation); USES (Uses)  
(manuf. of color filter by transferring **photosensitive** resin  
contg. chiral nematic **liq. crystal** on polyimide  
alignment layer)

L25 ANSWER 28 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:36935 CAPLUS

DOCUMENT NUMBER: 134:117128

TITLE: **Photosensitive** coloring compositions  
containing colored copolymer and color filters  
therefrom useful for **liquid crystal**  
display or color video camera

INVENTOR(S): Hosono, Tadashi

PATENT ASSIGNEE(S): Toppan Printing Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

CODEN: JKXXAF

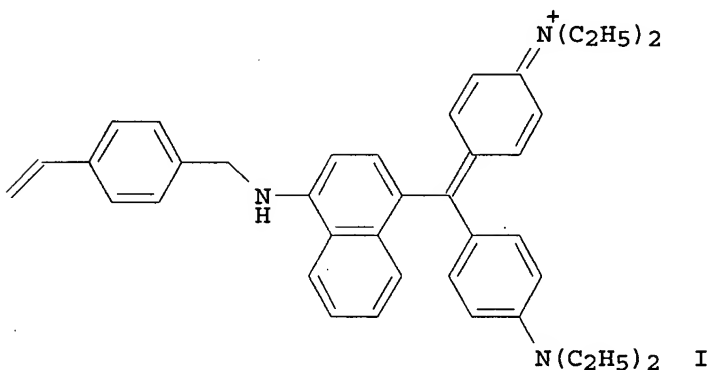
Patent

Japanese

1

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2001011336          | A2   | 20010116 | JP 1999-188967  | 19990702 |
| PRIORITY APPLN. INFO.: |      |          | JP 1999-188967  | 19990702 |

GI



AB The compns. with good transparency and resistance to heat and light comprise mainly a **photosensitive** copolymer (A) polymd. from a polymerizable pigment monomer, N-phenylmaleimide (P) and other monomers, wherein P is 3-40% of the copolymer wt., and optionally polyimide precursor (B), acrylic resin, other necessary additives and solvents. Thus, polyimg. a ClO<sub>4</sub> salt of I (an A monomer) 30, 2-acrylamido-2-methylpropanesulfonic acid 13, 2-hydroxyethyl methacrylate 30, methacrylic acid 11, N-phenylmaleimide 16 and 28% ammonia water 4 in the presence of AIBN 5 g in Me cellosolve gave an A with Mn 13,300 and Mw 18,200, 13.0 g of which was mixed with 22.0 g B. polymd. from 4,4'-diaminodiphenyl ether 9.1, bis(3-aminopropyl)tetramethyldisiloxane 0.5 and 3,3',4,4'-biphenyltetracarboxylic dianhydride 12.9 in cyclohexanone 77.5 g at 50.degree. for 3 h to give a title compn. This compn. was spin coated and dried to give a film of 1.2 .mu.m thickness, heated at 120.degree. for 20 min then was spin coated with a pos. photoresist Microposit S1400, heated at 100.degree. for 10 min, covered with a mask and developed as usual to give a color filter with good claimed properties.

IT 320600-72-4P

RL: DEV (Device component use); **IMF (Industrial manufacture)**;  
 POF (Polymer in formulation); PRP (Properties); TEM (Technical or  
 engineered material use); **PREP (Preparation)**; USES (Uses)  
 (colored copolymer; **photosensitive** coloring compns. contg.  
 colored copolymer and color filters therefrom useful for liq.

crystal display or color video camera)

RN 320600-72-4 CAPLUS

CN Ethanaminium, N-[4-[[4-(diethylamino)phenyl][4-[[[4-ethenylphenyl)methyl]amino]-1-naphthalenyl)methylene]-2,5-cyclohexadien-1-ylidene]-N-ethyl-, perchlorate, polymer with 2-hydroxyethyl 2-methyl-2-propenoate, 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid, 2-methyl-2-propenoic acid and 1-phenyl-1H-pyrrole-2,5-dione, ammonium salt (9CI) (CA INDEX NAME)

CM 1

CRN 320600-71-3

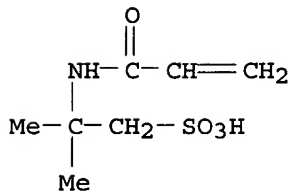
CMF (C40 H44 N3 . C10 H7 N O2 . C7 H13 N O4 S . C6 H10 O3 . C4 H6 O2 . Cl O4)x

CCI PMS

CM 2

CRN 15214-89-8

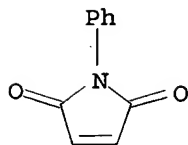
CMF C7 H13 N O4 S



CM 3

CRN 941-69-5

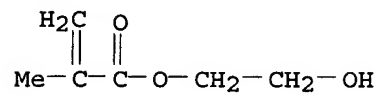
CMF C10 H7 N O2



CM 4

CRN 868-77-9

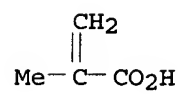
CMF C6 H10 O3



CM 5

CRN 79-41-4

CMF C4 H6 O2



CM 6

CRN 320600-70-2

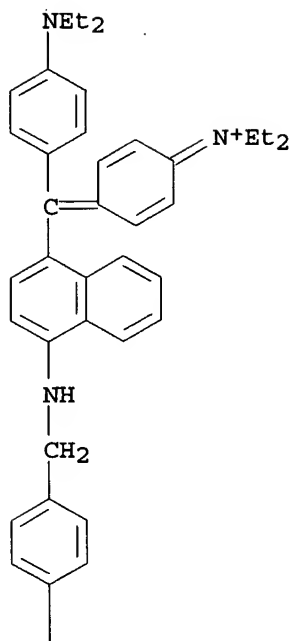
CMF C40 H44 N3 . Cl O4

CM 7

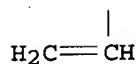
CRN 320600-69-9

CMF C40 H44 N3

PAGE 1-A



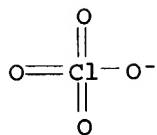
PAGE 2-A



CM 8

CRN 14797-73-0

CMF Cl O4



IC ICM C09B069-10

ICS C08F212-14; C08F220-34; C08F222-40; C09B067-20; G02B005-20

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 38, 74

KOROMA EIC1700

- ST polymerizable pigment monomer **photosensitive** copolymer coloring compn; color filter liq crystal display color video camera; phenylmaleimide **photosensitive** copolymer coloring compn; polyimide precursor coloring compn color filter; photoresist pos working color filter
- IT Polyimides, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (di-Me polysiloxane-, resin vehicle; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)
- IT Polyamic acids  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (di-Me siloxane-, polyimide precursor, resin vehicle; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)
- IT Polysiloxanes, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (di-Me, polyamic acid-, polyimide precursor, resin vehicle; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)
- IT Polysiloxanes, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (di-Me, polyimide-, resin vehicle; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)
- IT Pigments, nonbiological  
 (naphthanilide, polymerizable monomer; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)
- IT Phenolic resins, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (novolak, resin vehicle; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)
- IT Light-sensitive materials  
 Optical filters  
 (**photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)
- IT Crosslinking catalysts  
 (**photosensitizers**; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)
- IT Coloring materials

(polymeric; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)

IT 320600-72-4P

RL: DEV (Device component use); **IMF (Industrial manufacture)**; POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(colored copolymer; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)

IT 1143-72-2, 2,3,4-Trihydroxybenzophenone 42573-57-9, 2-(p-Methoxystyryl)-4,6-bis(trichloromethyl)-s-triazine 53130-54-4D, 1,2-Naphthoquinone-5-sulfonic acid, esters

RL: MOA (Modifier or additive use); USES (Uses)  
(**photosensitizer**; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)

IT 84329-59-9P, 3,3',4,4'-Biphenyltetracarboxylic dianhydride-bis(3-aminopropyl)tetramethyldisiloxane-4,4'-diaminodiphenyl ether copolymer

RL: DEV (Device component use); **IMF (Industrial manufacture)**; POF (Polymer in formulation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(polyamic acid, polyimide precursor, polyimide; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)

IT 111745-42-7, Microposit S1400

RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(pos. photoresist; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)

IT 320600-73-5

RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(resin vehicle; **photosensitive** coloring compns. contg. colored copolymer and color filters therefrom useful for liq. crystal display or color video camera)

L25 ANSWER 29 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:727312 CAPLUS

DOCUMENT NUMBER: 133:315705

TITLE: Liquid crystal display element and manufacture thereof

INVENTOR(S): Nomura, Yukio; Ogawa, Kazufumi; Otake, Tadashi; Takebe, Shoko

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Tokkyo Koho, 13 pp.

CODEN: JTXXFF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

## PATENT INFORMATION:

| PATENT NO.                                                                    | KIND | DATE     | APPLICATION NO. | DATE     |
|-------------------------------------------------------------------------------|------|----------|-----------------|----------|
| JP 3099825                                                                    | B1   | 20001016 | JP 1999-289581  | 19991012 |
| JP 2001108995                                                                 | A2   | 20010420 |                 |          |
| WO 2001026442                                                                 | A2   | 20010419 | WO 2000-IB1458  | 20001012 |
| WO 2001026442                                                                 | A3   | 20020228 |                 |          |
| WO 2001026442                                                                 | B1   | 20020620 |                 |          |
| W: CN, KR, US                                                                 |      |          |                 |          |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE    |      |          |                 |          |
| EP 1223604                                                                    | A1   | 20020717 | EP 2000-966348  | 20001012 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY |      |          |                 |          |

## PRIORITY APPLN. INFO.:

|                |   |          |
|----------------|---|----------|
| JP 1999-289581 | A | 19991012 |
| JP 2000-171886 | A | 20000608 |
| WO 2000-IB1458 | W | 20001012 |

AB The liq. crystal display element comprises a pair of orientation films formed on substrate sandwiching a liq. crystal layer, wherein both orientation films have a photosensitive group and have an orientation anisotropy upon receiving light and an anchoring energy of one of the orientation films is smaller than that on the other.

IT 302342-94-5P  
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)  
 (orientation film of liq. crystal display)

RN 302342-94-5 CAPLUS

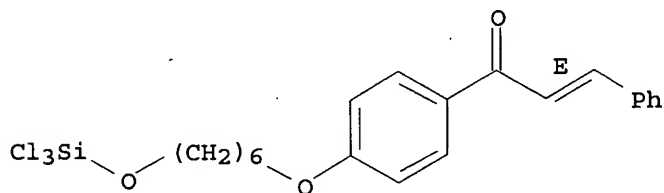
CN 2-Propen-1-one, 3-phenyl-1-[4-[[6-[(trichlorosilyl)oxy]hexyl]oxy]phenyl]-, (2E)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220202-83-5

CMF C21 H23 Cl3 O3 Si

Double bond geometry as shown.



IC ICM G02F001-1337  
 ICS C08G077-24; G09F009-35

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

KOROMA EIC1700

ST **liq crystal display orientation film**  
 IT **Liquid crystal displays**  
     (orientation film of)  
 IT Polyimides, uses  
     RL: DEV (Device component use); USES (Uses)  
         (orientation film of liq. crystal display)  
 IT **302342-94-5P**  
     RL: DEV (Device component use); PNU (Preparation, unclassified); **PREP**  
         (**Preparation**); USES (Uses)  
         (orientation film of liq. crystal display)

L25 ANSWER 30 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:704927 CAPLUS

DOCUMENT NUMBER: 134:223236

TITLE: **Liquid crystal alignment on the**  
         **films of polymethacrylate and polyurethane**  
         bearing an aminonitroazobenzene chromophore  
 AUTHOR(S): Choi, Dong Hoon; Kim, Jae Hyung; Cho, Kang Jin  
 CORPORATE SOURCE: College of Environment and Applied Chemistry, Kyung  
                     Hee University, Kyungki, 449-701, S. Korea  
 SOURCE: Korea Polymer Journal (2000), 8(4), 172-178  
         CODEN: KPJOE2; ISSN: 1225-5947

PUBLISHER: Polymer Society of Korea

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We synthesized polymethacrylate and polyurethane bearing a  
     **photosensitive** azobenzene chromophore. Photo-induced  
     birefringence of the thin film was obsd. under a linearly  
     polarized light ( $\lambda = 532$  nm). Dynamic behaviors of birefringence  
     in two polymers were investigated in terms of the rate consts. of growth  
     and decay. An induced dichroism was obsd. from polarized UV-VIS  
     absorption spectroscopy. Layers of two **photosensitive** polymers  
     were used for aligning **liq. crystal** (LC) mols. instead  
     of one of the rubbed polyimide layers in the conventional twisted nematic  
     cell. For producing homogeneous alignment of a nematic LC mol., a  
     linearly polarized light was exposed to the films of two  
     polymers. The stability of the LC alignment upon the linearly polarized  
     light exposure was also studied.

IT **126390-53-2P**  
     RL: PRP (Properties); SPN (Synthetic preparation); **PREP**  
         (**Preparation**)  
         (prepn. and liq. crystal alignment on films  
         of polymethacrylate and polyurethane bearing aminonitroazobenzene  
         chromophore)

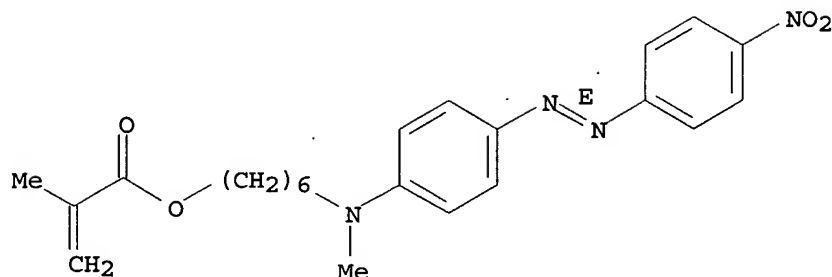
RN 126390-53-2 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-[methyl[4-[(1E)-(4-  
     nitrophenyl)azo]phenyl]amino]hexyl ester, homopolymer (9CI) (CA INDEX  
     NAME)

CM 1

CRN 126390-52-1  
CMF C23 H28 N4 O4

Double bond geometry as shown.



- CC 36-5 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 37, 75
- ST **liq crystal** alignment aminonitroazobenzene chromophore  
polymethacrylate polyurethane
- IT Birefringence  
(photoinduced; prepn. and **liq. crystal** alignment on  
**films** of polymethacrylate and polyurethane bearing  
aminonitroazobenzene chromophore)
- IT Light-sensitive materials  
**Liquid crystals**, polymeric  
Polymerization  
(prepn. and **liq. crystal** alignment on **films**  
of polymethacrylate and polyurethane bearing aminonitroazobenzene  
chromophore)
- IT Polyurethanes, properties  
RL: PRP (Properties); SPN (**Synthetic preparation**); PREP  
(**Preparation**)  
(prepn. and **liq. crystal** alignment on **films**  
of polymethacrylate and polyurethane bearing aminonitroazobenzene  
chromophore)
- IT 126390-53-2P 329189-59-5P 329189-61-9P  
RL: PRP (Properties); SPN (**Synthetic preparation**); PREP  
(**Preparation**)  
(prepn. and **liq. crystal** alignment on **films**  
of polymethacrylate and polyurethane bearing aminonitroazobenzene  
chromophore)
- REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 31 OF 44 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2000:562871 CAPLUS  
DOCUMENT NUMBER: 133:157952  
TITLE: Generation of optical anisotropy in polymer  
**films**, method for orientation of lyotropic  
**liquid crystals**, oriented dye

films, and their manufacture  
 INVENTOR(S): Ichimura, Kunihiro  
 PATENT ASSIGNEE(S): Dainippon Printing Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2000226448          | A2   | 20000815 | JP 1999-28992   | 19990205 |
| PRIORITY APPLN. INFO.: |      |          | JP 1999-28992   | 19990205 |

AB Polymer films having photosensitive groups in their main or side chains are irradiated with linearly polarized light for selective optical reorientation of the polymers (orientation of mol. axis in a direction perpendicular to the polarization axis of the irradiated light). The amt. of the photon irradiation, in the above process, is controlled to make the dichroic ratio (the ratio of absorbance of monitor linearly polarized light parallel to the polarization axis to that perpendicular to the axis) to increase to almost its saturation value. Lyotropic liq. crystals are oriented by their contacting with the above stated polymer films showing optical anisotropy. Oriented dye films, comprising of the above stated polymer films and lyotropic liq. crystals, and their manuf. are also claimed. Optical anisotropy is generated in polymer films without optical reorientation.

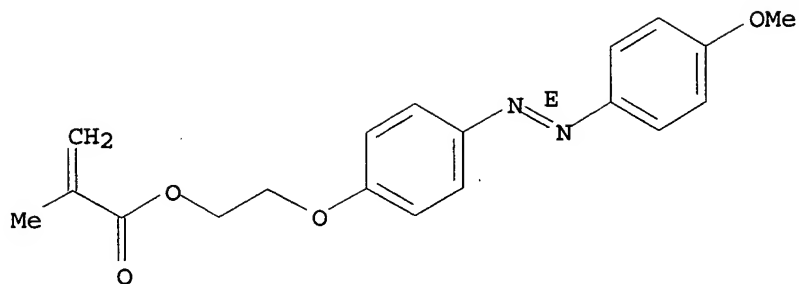
IT 114556-78-4P 114556-86-4P 168647-61-8P  
 185386-04-3P 185838-71-5P 219482-95-8P  
 287386-80-5P  
 RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (irradiation of photosensitive polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. crystals, and preparation of oriented dye films)

RN 114556-78-4 CAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-[4-[(1E)-(4-methoxyphenyl)azo]phenoxy]ethyl ester, homopolymer (9CI). (CA INDEX NAME)

CM 1

CRN 114556-77-3  
 CMF C19 H20 N2 O4

Double bond geometry as shown.



RN 114556-86-4 CAPLUS

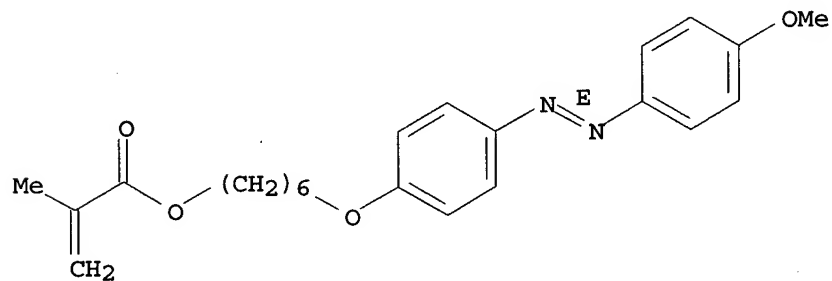
CN 2-Propenoic acid, 2-methyl-, 6-[4-[(1E)-(4-methoxyphenyl)azo]phenoxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 114556-85-3

CMF C23 H28 N2 O4

Double bond geometry as shown.



RN 168647-61-8 CAPLUS

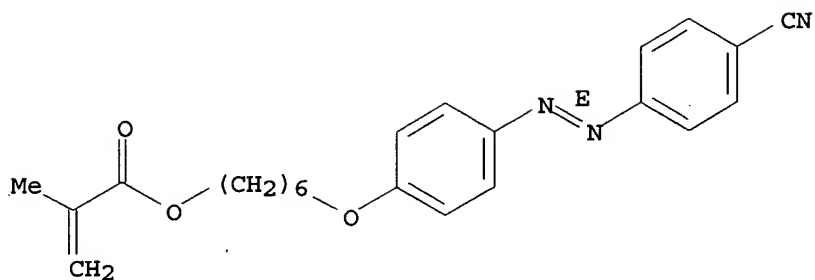
CN 2-Propenoic acid, 2-methyl-, 6-[4-[(4-cyanophenyl)azo]phenoxy]hexyl ester, (2E)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 123924-76-5

CMF C23 H25 N3 O3

Double bond geometry as shown.



RN 185386-04-3 CAPLUS

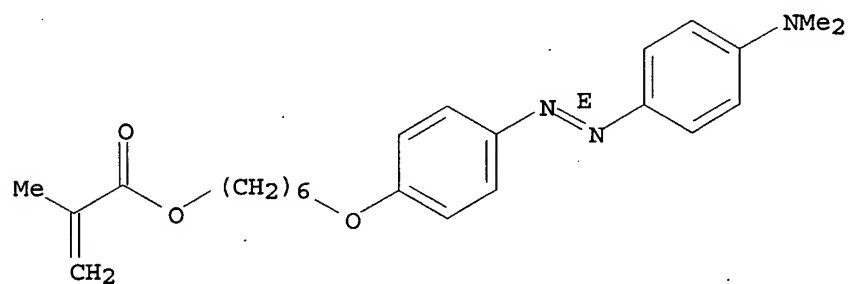
CN 2-Propenoic acid, 2-methyl-, 6-[4-[(1E)-[4-(dimethylamino)phenyl]azo]phenoxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 185385-88-0

CMF C24 H31 N3 O3

Double bond geometry as shown.



RN 185838-71-5 CAPLUS

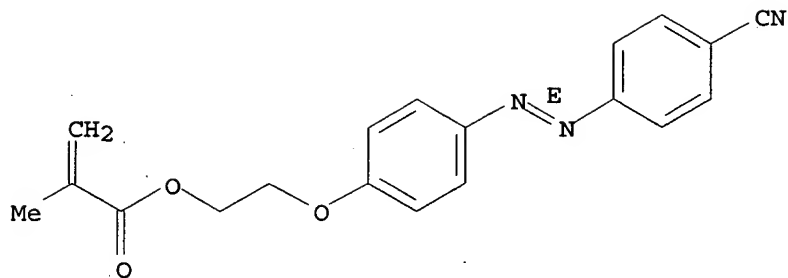
CN 2-Propenoic acid, 2-methyl-, 2-[4-[(1E)-(4-cyanophenyl)azo]phenoxy]ethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 185838-47-5

CMF C19 H17 N3 O3

Double bond geometry as shown.



RN 219482-95-8 CAPLUS

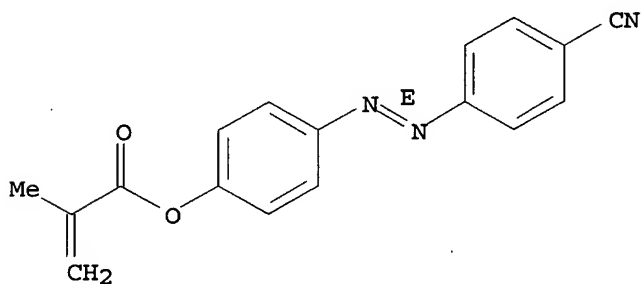
CN 2-Propenoic acid, 2-methyl-, 4-[(1E)-(4-cyanophenyl)azo]phenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 219482-94-7

CMF C17 H13 N3 O2

Double bond geometry as shown.



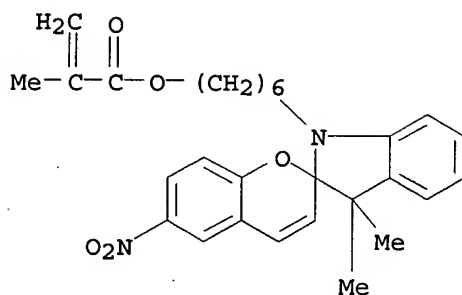
RN 287386-80-5 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 6-(3',3'-dimethyl-6-nitrospiro[2H-1-benzopyran-2,2'-[2H]indol]-1'(3'H)-yl)hexyl ester, polymer with methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 89908-29-2

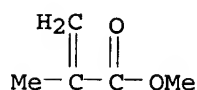
CMF C28 H32 N2 O5



CM 2

CRN 80-62-6

CMF C5 H8 O2



IC ICM C08G065-02

ICS C08F020-36; C08G073-00; C08J005-18

CC 75-11 (Crystallography and Liquid Crystals)

Section cross-reference(s): 38

ST optical anisotropy **photosensitive** polymer film;  
lyotropic liq crystal oriented dye film;  
linearly polarized light irradiation polymer an

IT Optical anisotropy

Polarized light

(irradiation of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. crystals, and preparation of oriented dye films)

IT **Liquid crystals**

(lyotropic; irradiation of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. crystals, and preparation of oriented dye films)

IT **Dyes**

(oriented films; irradiation of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. crystals, and preparation of oriented dye films)

IT 114556-78-4P 114556-86-4P 168647-61-8P

185386-04-3P 185838-71-5P 219482-95-8P

287386-80-5P

RL: PEP (Physical, engineering or chemical process); PNU (Preparation,

unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (irradn. of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. **crystals**, and prepn. of oriented dye **films**)

IT 15826-37-6, Disodium cromoglycate

RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (irradn. of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. **crystals**, and prepn. of oriented dye **films**)

L25 ANSWER 32 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:562853 CAPLUS

DOCUMENT NUMBER: 133:185828

TITLE: Generation of optical anisotropy in polymer **films**, method for orientation of lyotropic **liquid crystals**, oriented dye **films**, and their manufacture

INVENTOR(S): Ichimura, Kunihiro

PATENT ASSIGNEE(S): Dainippon Printing Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2000226415          | A2   | 20000815 | JP 1999-28993   | 19990205 |
| PRIORITY APPLN. INFO.: |      |          | JP 1999-28993   | 19990205 |

AB Polymer **films** having **photosensitive** groups in their main or side chains are irradiated with linearly polarized light for selective conversion of the chem. structure of the polymers that have transition moment parallel to the polarization axis of the irradiated light. The amt. of the photon irradn., in the above process, is controlled to make the dichroic ratio (the ratio of absorbance of monitor linearly polarized light parallel to the polarization axis to that perpendicular to the axis) to be max. Lyotropic liq. **crystals** are oriented by their contacting with the above stated polymer **films** showing optical anisotropy. Oriented dye **films**, comprising of the above stated polymer **films** and lyotropic liq. **crystals**, and their manuf. are also claimed. Optical anisotropy is generated in polymer **films** without optical reorientation.

IT 151903-00-3P

RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(irradn. of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. **crystals**, and prepn. of oriented dye **films**)

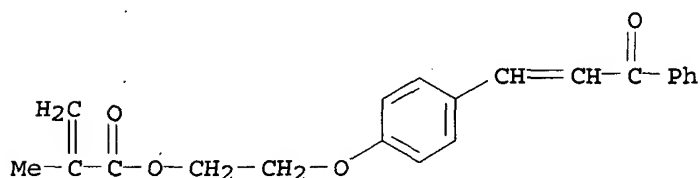
RN 151903-00-3 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[4-(3-oxo-3-phenyl-1-propenyl)phenoxy]ethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 34331-65-2

CMF C21 H20 O4



IC ICM C08F112-14

ICS C08F112-34; C08G073-00; C08G073-10; C08J005-18

CC 75-11 (Crystallography and Liquid Crystals)

Section cross-reference(s): 38

ST optical anisotropy **photosensitive** polymer film;

lyotropic liq **crystal** oriented dye film;

linearly polarized light irradn polymer an

IT Light-sensitive materials

Light-sensitive materials

(**films**, polymers; irradn. of **photosensitive**

polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. **crystals**, and prepn. of oriented dye **films**)

IT Optical anisotropy

Polarized light

(irradn. of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. **crystals**, and prepn. of oriented dye **films**)

IT **Films**

**Films**

(light-sensitive, polymers; irradn. of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. **crystals**, and prepn. of oriented dye **films**)

IT **Liquid crystals**

(lyotropic; irradn. of **photosensitive** polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liq. **crystals**, and prepn. of oriented dye **films**)

IT Dyes

(oriented films; irradiation of photosensitive polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liquid crystals, and preparation of oriented dye films)

IT 15826-37-6P, Disodium cromoglycate 151903-00-3P 170788-72-4P  
177856-50-7P 181373-51-3P 288255-48-1P 288255-50-5P 288255-52-7P  
288255-53-8P

RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(irradiation of photosensitive polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liquid crystals, and preparation of oriented dye films)

IT 64498-59-5P, 7-Methacryloyloxy coumarin 149295-82-9P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(irradiation of photosensitive polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liquid crystals, and preparation of oriented dye films)

IT 93-35-6, 7-Hydroxycoumarin 920-46-7 31170-52-2, 7-(2-Hydroxyethoxy) coumarin

RL: RCT (Reactant); RACT (Reactant or reagent)

(irradiation of photosensitive polymers with linearly polarized light for their optical anisotropy, orientation of lyotropic liquid crystals, and preparation of oriented dye films)

L25 ANSWER 33 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:258768 CAPLUS

DOCUMENT NUMBER: 132:301035

TITLE: Liquid crystal display device  
having photosensitive resin laminate-based  
orientation-controlling film

INVENTOR(S): Togano, Takeshi; Terada, Tadahiro; Asao, Yasushi;  
Mori, Yoshimasa; Moriyama, Takashi

PATENT ASSIGNEE(S): Canon Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 41 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2000111919          | A2   | 20000421 | JP 1998-297596  | 19981006 |
| PRIORITY APPLN. INFO.: |      |          | JP 1998-297596  | 19981006 |

AB The device has a liquid crystal sandwiched between a pair of substrates selectively having a uniaxially orientation-controlling

film contg. two different kinds of photosensitive resin laminates. The device is useful for a chiral-smectic liq. crystal-contg. display device. The device shows improved liq. crystal orientation and driving characteristics.

IT 264197-61-7P

RL: DEV (Device component use); IMF (Industrial manufacture);  
MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(liq. crystal device having photosensitive  
resin laminate-based orientation-controlling film)

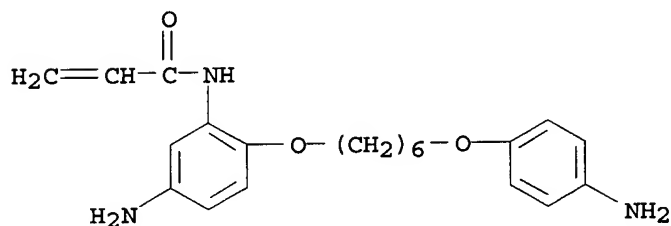
RN 264197-61-7 CAPLUS

CN 2-Propenamide, N-[5-amino-2-[[6-(4-aminophenoxy)hexyl]oxy]phenyl]-,  
polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA  
INDEX NAME)

CM 1

CRN 264197-60-6

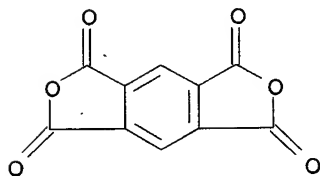
CMF C21 H27 N3 O3



CM 2

CRN 89-32-7

CMF C10 H2 O6



IC ICM G02F001-1337

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38

ST liq crystal display orientation controlling  
film; photosensitive resin laminate LCD; polyamic acid  
laminate LCD orientation controlling film; uniaxial orientation  
controlling film LCD; chiral smectic liq

KOROMA EIC1700

crystal display cell

IT Liquid crystal displays  
(chiral smectic; liq. crystal device having  
photosensitive resin laminate-based orientation-controlling  
film)

IT Polyamic acids  
RL: DEV (Device component use); USES (Uses)  
(liq. crystal device having photosensitive  
resin laminate-based orientation-controlling film)

IT Polyimides, uses  
RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)  
(liq. crystal device having photosensitive  
resin laminates)

IT 25668-09-1P 264197-61-7P  
RL: DEV (Device component use); IMF (Industrial manufacture);  
MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(liq. crystal device having photosensitive  
resin laminate-based orientation-controlling film)

IT 25119-82-8, Poly(diethylaminoethylmethacrylate)  
RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)  
(liq. crystal device having photosensitive  
resin laminate-based orientation-controlling film)

IT 264197-59-3  
RL: DEV (Device component use); USES (Uses)  
(liq. crystal mixt.; liq. crystal  
device having photosensitive resin laminate-based  
orientation-controlling film)

L25 ANSWER 34 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:254637 CAPLUS

DOCUMENT NUMBER: 132:301030

TITLE: Photosensitive resin material,  
liquid crystal orientation  
film material, and liquid  
crystal device

INVENTOR(S): Togano, Takeshi; Terada, Tadahiro; Asao, Yasushi;  
Katanosaka, Akisato; Matoba, Tsuneko; Masahara,  
Kazuyuki

PATENT ASSIGNEE(S): Canon Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

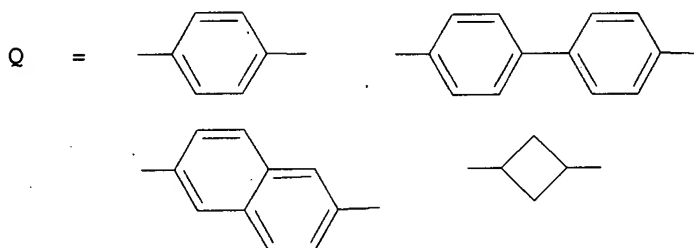
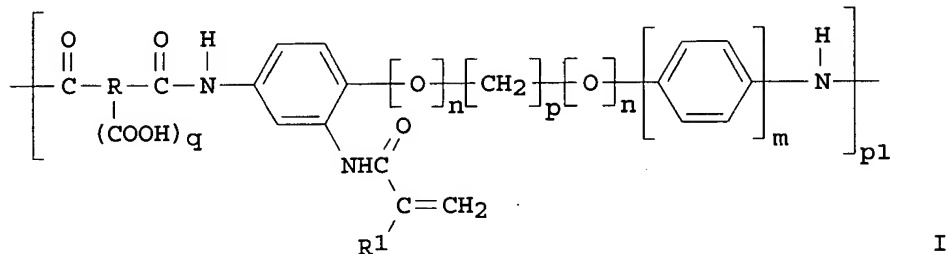
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 2000111921          | A2   | 20000421 | JP 1998-296258  | 19981005 |
| PRIORITY APPLN. INFO.: |      |          | JP 1998-296258  | 19981005 |

KOROMA EIC1700

GI



AB The material contains (A) a polymer having a repeating unit I ( $R = Q$ ;  $q = 1, 2$ ;  $m, n = 0, 1$ ;  $p = 2-10$  integer;  $R_1 = H, C1-4$  alkyl) and (B) a photopolymer. initiator and a **photosensitizer**. The latter material comprises the resin material. The device contains the **film**. The **film** shows homogeneous **film** thickness and excellent flatness.

IT 264197-61-7P

RL: DEV (Device component use); IMF (Industrial manufacture);  
PREP (Preparation); USES (Uses)

(photosensitive resin material for polyimide-based  
orientation film in liq. crystal device)

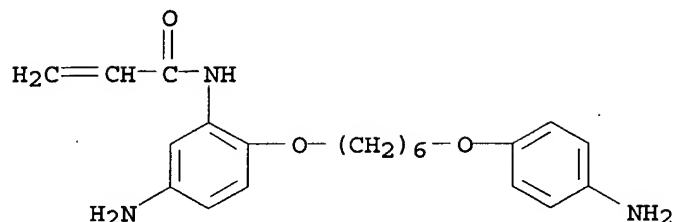
RN 264197-61-7 CAPLUS

CN 2-Propenamide, N-[5-amino-2-[[6-(4-aminophenoxy)hexyl]oxy]phenyl]-,  
polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA  
INDEX NAME)

CM 1

CRN 264197-60-6

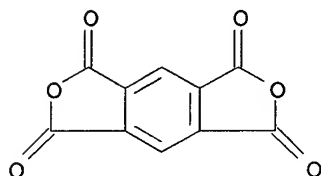
CMF C21 H27 N3 O3



CM 2

CRN 89-32-7

CMF C10 H2 O6



IC ICM G02F001-1337  
ICS C08G073-12; C09D005-00; G02F001-1339; G03F007-032

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38

ST **liq crystal** display device orientation **film**;  
**photosensitive** resin photoinitiator **photosensitizer** LCD;  
polyimide orientation **film** LCD

IT **Liquid crystal** displays  
Polymerization catalysts  
(**photosensitive** resin material for polyimide-based orientation **film** in **liq. crystal** device)

IT Polyimides, uses  
RL: DEV (Device component use); USES (Uses)  
(**photosensitive** resin material for polyimide-based orientation **film** in **liq. crystal** device)

IT 24650-42-8, Irgacure 651  
RL: CAT (Catalyst use); USES (Uses)  
(**photosensitive** resin material for polyimide-based orientation **film** in **liq. crystal** device)

IT 57202-52-5 57202-56-9 57202-62-7 92519-52-3 113722-79-5  
117392-57-1 128928-90-5 139674-42-3 139674-45-6 139674-48-9  
139716-32-8 139907-15-6 150635-62-4 150635-69-1 154407-84-8  
264121-75-7, Daitocure PAA  
RL: DEV (Device component use); USES (Uses)  
(**photosensitive** resin material for polyimide-based orientation **film** in **liq. crystal** device)

KOROMA EIC1700

IT 264197-61-7P

RL: DEV (Device component use); IMF (Industrial manufacture);

PREP (Preparation); USES (Uses)

(photosensitive resin material for polyimide-based  
orientation film in liq. crystal device)

L25 ANSWER 35 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:43357 CAPLUS

DOCUMENT NUMBER: 132:94423

TITLE: Photopolymerizable compositions and formation of  
photofunctional films thereof

INVENTOR(S): Kuratate, Tomoaki

PATENT ASSIGNEE(S): Sharp Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| JP 2000017003 | A2   | 20000118 | JP 1998-183000  | 19980629 |

PRIORITY APPLN. INFO.: JP 1998-183000 19980629

AB The photopolymerizable compns. contain polymn. initiators and .gtoreq.1 polymn. retarders 1-50% for the total amt. of the polymerizable compds. and are capable of forming .ltoreq.100-.mu.m, esp. .ltoreq.10-.mu.m patterns in area distributions of phys. quantity selected from polymer d., refractive index, roughness shape, and orientation. Polymerizable compds. which are not anisotropic and .gtoreq.1 polymerizable compds. having differences of refractive indexes which reflect the anisotropy .gtoreq.0.05 may be employed. The polymerizable compds. may be able to be oriented according to orientation controlling forces in the state before or partial polymn. The polymerizable compds. may contain rigid core sites bearing cyclic functional groups and chain terminals substituted with functional groups bearing polymerizable unsatd. bonds. The polymerizable compds. may have frameworks like those of liq. crystal materials. The retarders bear unsatd. bonds which can contribute to polymn. and, next to the bonds, sites of ensembles of functional groups bearing conjugated .pi.-bonds. Thus, a compn. contg. lauryl acrylate, p-PhC6H4CH:CH2, and Irgacure 369 was injected by capillarity in an open glass cell equipped with an orientation film, spacers, and a seal. By exposing to light with or without a mask, a pattern with fineness .ltoreq.10 .mu.m was obtained.

IT 254754-25-1

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(photopolymerizable compns. contg. initiators and **retarders**  
for photofunctional **films** with ultrafine patterns)

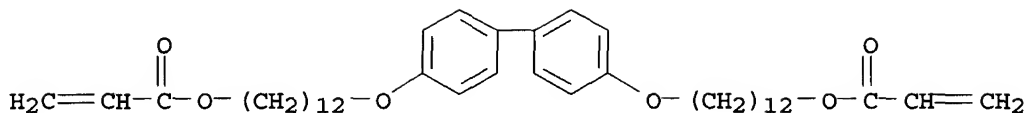
RN 254754-25-1 CAPLUS

CN 2-Propenoic acid, [1,1'-biphenyl]-4,4'-diylbis(oxy-12,1-dodecanediyl)  
ester, polymer with dodecyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 254754-24-0

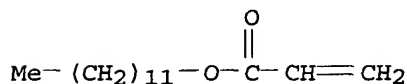
CMF C42 H62 O6



CM 2

CRN 2156-97-0

CMF C15 H28 O2



IC ICM C08F002-00

ICS C08F002-40; C08F002-48; C08F012-02; C08F020-10; G02B001-04;  
G02B001-10; G02B003-00; G02B005-02; G02B005-18; G03F007-004;  
G03H001-04

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 74

ST photopolymerizable compn polymn initiator photofunctional film; polymn  
retarder photopolymerizable compn photofunctional film; liq cryst polymer  
compn polymn retarder

IT Liquid crystal displays

(blend with photopolymerizable compns. contg. initiators and retarders  
for photofunctional films with ultrafine patterns)

IT Liquid crystals

(nematic; blend with photopolymerizable compns. contg. initiators and  
retarders for photofunctional films with ultrafine patterns)

IT Plastic films

(photopolymerizable compns. contg. initiators and retarders for  
photofunctional films with ultrafine patterns)

IT Photoimaging materials

(photopolymerizable; photopolymerizable compns. contg. initiators and  
retarders for photofunctional films with ultrafine patterns)

IT Polymerization catalysts

(photopolymn.; photopolymerizable compns. contg. initiators and  
retarders for photofunctional films with ultrafine patterns)

IT 254978-16-0, SP 8247

RL: PRP (Properties); TEM (Technical or engineered material use); USES  
(Uses)

(blend with photopolymerizable compns. contg. initiators and retarders)

KOROMA EIC1700

for photofunctional films with ultrafine patterns)  
 IT 2156-97-0, Lauryl acrylate 254754-25-1  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (photopolymerizable compns. contg. initiators and retarders  
 for photofunctional films with ultrafine patterns)  
 IT 98-83-9, .alpha.-Methylstyrene, uses 530-48-3 827-54-3 2350-89-2  
 4433-13-0 46745-66-8 90826-32-7 254754-22-8 254754-23-9  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (retarders, photopolymerizable compns. contg. initiators and; blend  
 with non-polymerizable, low mol.-wt. nematic liq. crystal material for  
 photofunctional films with ultrafine patterns)

L25 ANSWER 36 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:752301 CAPLUS

DOCUMENT NUMBER: 132:17456

TITLE: liquid-crystalline orientation  
 polymer film, manufacture of the  
 film, and optical device using the  
 film

INVENTOR(S): Ichimura, Kunihiro

PATENT ASSIGNEE(S): Agency of Industrial Sciences and Technology, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|-------------|------|----------|-----------------|----------|
| JP 11326638 | A2   | 19991126 | JP 1998-145100  | 19980511 |
| JP 3163539  | B2   | 20010508 |                 |          |

PRIORITY APPLN. INFO.: JP 1998-145100 19980511

OTHER SOURCE(S): MARPAT 132:17456

AB The film consists of a polymer film involving dichroic  
 photosensitive structural unit, after obliquely irradiating linear  
 polarized beam or nonpolarized beam, and a nonphotosensitive layer made of  
 discotic or polymeric liq. crystals on the dichroic  
 layer. The bottom layer may be latently liq. cryst.  
 or cryst. polymer film involving dichroic  
 photosensitive structural unit. The optical device, e.g.,  
 polarizer, optical waveguide, optical recording medium, etc., uses the  
 film. The film is manufd. by obliquely irradiating the  
 beam on the dichroic photosensitive film layer,  
 heating, and forming the liq. crystal layer.

IT 213404-12-7P 213404-16-1P 224648-85-5P

227026-41-7P 251462-55-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)

(liq. cryst. orientation film comprising

dichroic photosensitive bottom layer and discotic or  
polymeric liq. crystal layer for optical devices)

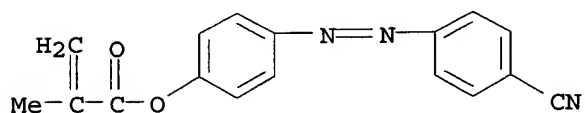
RN 213404-12-7 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 4-[(4-cyanophenyl)azo]phenyl ester,  
homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 213404-10-5

CMF C17 H13 N3 O2



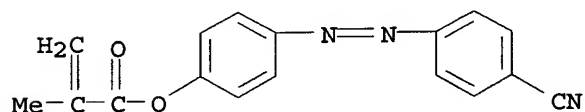
RN 213404-16-1 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 4-[(4-cyanophenyl)azo]phenyl ester, polymer  
with 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 213404-10-5

CMF C17 H13 N3 O2



CM 2

CRN 107-13-1

CMF C3 H3 N



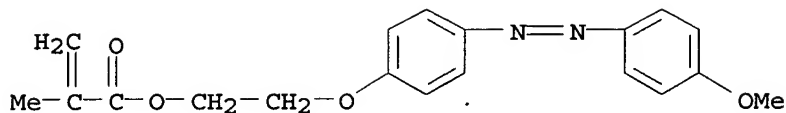
RN 224648-85-5 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[4-[(4-methoxyphenyl)azo]phenoxy]ethyl  
ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 224648-82-2

CMF C19 H20 N2 O4



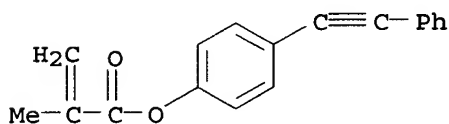
RN 227026-41-7 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 4-(phenylethynyl)phenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 227026-39-3

CMF C18 H14 O2



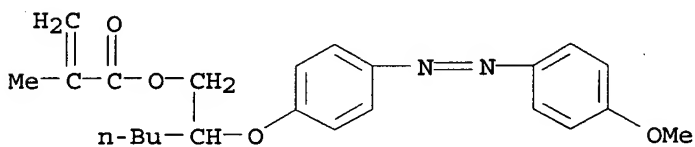
RN 251462-55-2 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[4-[(4-methoxyphenyl)azo]phenoxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 251462-54-1

CMF C23 H28 N2 O4



IT 118086-64-9

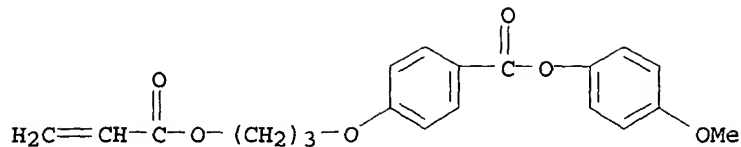
RL: TEM (Technical or engineered material use); USES (Uses)  
(liq. cryst. orientation film comprising  
dichroic photosensitive bottom layer and discotic or  
polymeric liq. crystal layer for optical devices)

RN 118086-64-9 CAPLUS

CN Benzoic acid, 4-[3-[(1-oxo-2-propenyl)oxy]propoxy]-, 4-methoxyphenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 118086-63-8  
CMF C20 H20 O6



- IC ICM G02B005-30  
ICS B29D011-00; G02F001-1335
- CC 75-11 (Crystallography and Liquid Crystals)  
Section cross-reference(s): 38, 73
- ST **liq cryst orientation polymer film; dichroic photosensitive polymer layer laminate; discotic liq crystal layer laminate; polymeric liq crystal layer laminate; linear polarized beam irradsn liq crystal**
- IT **Liquid crystals**  
(discotic; liq. cryst. orientation film comprising dichroic **photosensitive** bottom layer and discotic or polymeric liq. crystal layer for optical devices)
- IT Dichroism  
**Liquid crystals, polymeric**  
Optical instruments  
Polarizers  
(liq. cryst. orientation film comprising dichroic **photosensitive** bottom layer and discotic or polymeric liq. crystal layer for optical devices)
- IT 1849-26-9P, 4-Phenylethynylphenol  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate for monomer; in liq. cryst. orientation film comprising dichroic **photosensitive** bottom layer and discotic or polymeric liq. crystal layer for optical devices)
- IT 170788-72-4P 181373-51-3P 213404-12-7P 213404-16-1P 224648-85-5P 227026-41-7P 251462-55-2P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(liq. cryst. orientation film comprising dichroic **photosensitive** bottom layer and discotic or polymeric liq. crystal layer for optical devices)
- IT 79194-31-3 118086-64-9  
RL: TEM (Technical or engineered material use); USES (Uses)  
(liq. cryst. orientation film comprising dichroic **photosensitive** bottom layer and discotic or polymeric liq. crystal layer for optical devices)
- IT 26029-68-5  
RL: RCT (Reactant); RACT (Reactant or reagent)

(monomer from; for liq. **cryst.** orientation  
film comprising dichroic **photosensitive** bottom layer  
and discotic or polymeric liq. **crystal** layer for  
optical devices)

IT 536-74-3, Phenylacetylene 1927-95-3, p-Bromophenyl acetate

RL: RCT (Reactant); RACT (Reactant or reagent)

(monomer from; in liq. **cryst.** orientation  
film comprising dichroic **photosensitive** bottom layer  
and discotic or polymeric liq. **crystal** layer for  
optical devices)

IT 213404-10-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP

(Preparation); RACT (Reactant or reagent)

(monomer; for liq. **cryst.** orientation film  
comprising dichroic **photosensitive** bottom layer and discotic  
or polymeric liq. **crystal** layer for optical  
devices)

IT 227026-39-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP

(Preparation); RACT (Reactant or reagent)

(monomer; in liq. **cryst.** orientation film  
comprising dichroic **photosensitive** bottom layer and discotic  
or polymeric liq. **crystal** layer for optical  
devices)

L25 ANSWER 37 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:559292 CAPLUS

DOCUMENT NUMBER: 132:167295

TITLE: High performance **photosensitive** polymers in  
thin films and their abilities to align  
liquid-crystals on the surface

AUTHOR(S): Ree, Moonhor; Kim, Sang Il; Lee, Seung Woo

CORPORATE SOURCE: Department of Chemistry and Polymer Research  
Institute, University of Science & Technology  
(POSTECH), Pohang, 790-784, S. Korea

SOURCE: Polymer Preprints (American Chemical Society, Division  
of Polymer Chemistry) (1999), 40(2), 1223-1224  
CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer  
Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB New **photosensitive** polymers with cinnamate and coumarin side  
groups were synthesized, and their photoreactivity and photoalignment  
characteristics were detd. The basic properties of rubbing processability  
of the polymers in films, and the alignment and pretilt behavior  
of liq. **crystal** mols. were investigated with varying  
UV exposure dose, UV polarization, and rubbing d.

IT 258833-33-9

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(synthesis and properties of high performance **photosensitive**  
polymers in thin films and their surface alinement with

**liq.-crystals)**

RN 258833-33-9 CAPLUS

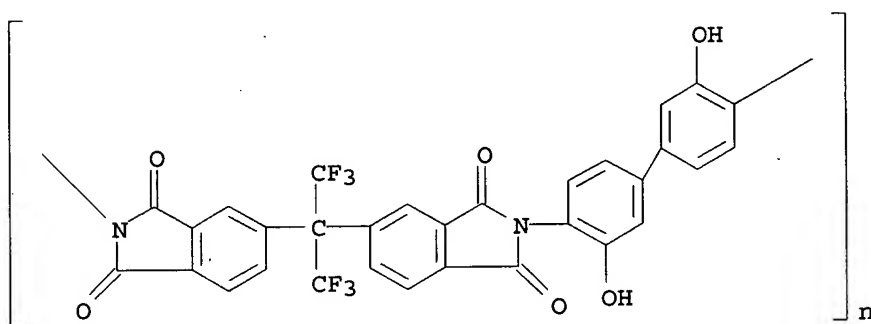
CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl) [2,2,2-trifluoro-1-(trifluoromethyl)ethylidene] (1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl) (3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)], 3-phenyl-2-propenoate (ester) (9CI) (CA INDEX NAME)

CM 1

CRN 165054-79-5

CMF (C31 H14 F6 N2 O6)n

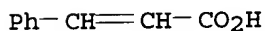
CCI PMS



CM 2

CRN 621-82-9

CMF C9 H8 O2



IT 258833-32-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(synthesis and properties of high performance photosensitive polymers in thin films and their surface alinement with liq.-crystals)

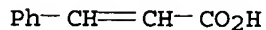
RN 258833-32-8 CAPLUS

CN 1,3-Isobenzofurandione, 5,5'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis-, polymer with 4,4'-diamino[1,1'-biphenyl]-3,3'-diol, 3-phenyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 621-82-9

CMF C9 H8 O2

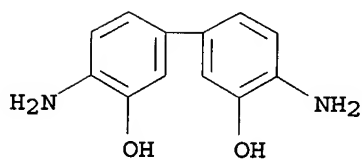


CM 2

CRN 165054-78-4  
CMF (C19 H6 F6 O6 . C12 H12 N2 O2)x  
CCI PMS

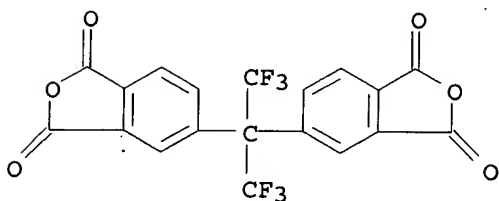
CM 3

CRN 2373-98-0  
CMF C12 H12 N2 O2



CM 4

CRN 1107-00-2  
CMF C19 H6 F6 O6



CC 38-3 (Plastics Fabrication and Uses)

ST **photosensitive polymer thin film liq crystal**

IT Polyimides, properties

Polyimides, properties

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(fluorine-contg.; synthesis and properties of high performance photosensitive polymers in thin films and their surface alinement with liq.-crystals)

IT Plastic films

(photosensitive; synthesis and properties of high performance

- photosensitive polymers in thin films and their surface alinement with liq.-crystals)
- IT Fluoropolymers, properties  
Fluoropolymers, properties  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyimide-; synthesis and properties of high performance photosensitive polymers in thin films and their surface alinement with liq.-crystals)
- IT Light-sensitive materials  
Liquid crystals  
UV radiation  
(synthesis and properties of high performance photosensitive polymers in thin films and their surface alinement with liq.-crystals)
- IT 91963-63-2D, 7-(2-Hydroxyethoxy)-4-methylcoumarin, reaction products with fluorinated polyimides 165054-78-4D, reaction products with (hydroxyethoxy)methylcoumarin 258833-33-9  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(synthesis and properties of high performance photosensitive polymers in thin films and their surface alinement with liq.-crystals)
- IT 165054-79-5DP, reaction products with (hydroxyethoxy)methylcoumarin 258833-32-8P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(synthesis and properties of high performance photosensitive polymers in thin films and their surface alinement with liq.-crystals)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 38 OF 44 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 1998:804087 CAPLUS  
DOCUMENT NUMBER: 130:59183  
TITLE: Method for producing phase retarder film  
INVENTOR(S): Namioka, Makoto  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
SOURCE: Eur. Pat. Appl., 16 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.                                                                                | KIND | DATE     | APPLICATION NO. | DATE     |
|-------------------------------------------------------------------------------------------|------|----------|-----------------|----------|
| EP 883016                                                                                 | A1   | 19981209 | EP 1998-110347  | 19980605 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO |      |          |                 |          |
| JP 11052134                                                                               | A2   | 19990226 | JP 1998-158064  | 19980605 |
| PRIORITY APPLN. INFO.:                                                                    |      |          | JP 1997-149267  | 19970606 |

AB The present invention provides a method for producing a phase retarder film wherein a resin layer having at least one kind of photoreactive substituent is irradiated with parallel beams. The method of the present invention enables the prodn. of a large-area phase retarder film with ease as compared with conventional methods wherein irradiation of linearly polarized UV rays, electrostatic field, or magnetostatic field is conducted, and hence it is suitable for the industrial application.

IT 217458-08-7P 217458-09-8P

RL: DEV (Device component use); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(prepn. and UV irradiation in prep. phase retarder films for liq.-crystal display devices)

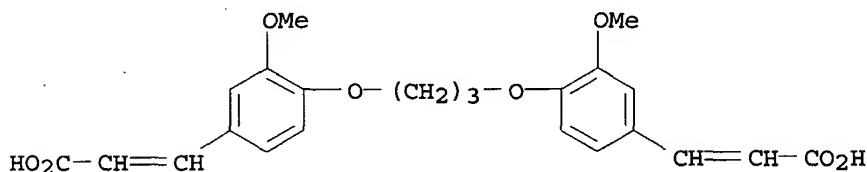
RN 217458-08-7 CAPLUS

CN 2-Propenoic acid, 3,3'-[1,3-propanediylbis[oxy(3-methoxy-4,1-phenylene)]]bis-, polymer with piperazine (9CI) (CA INDEX NAME)

CM 1

CRN 101913-30-8

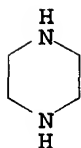
CMF C23 H24 O8



CM 2

CRN 110-85-0

CMF C4 H10 N2



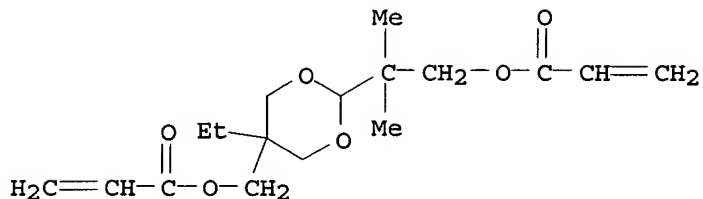
RN 217458-09-8 CAPLUS

CN 2-Propenoic acid, [2-[1,1-dimethyl-2-[(1-oxo-2-propenyl)oxy]ethyl]-5-ethyl-1,3-dioxan-5-yl]methyl ester, polymer with 4,4'-diiodo-1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 87320-05-6

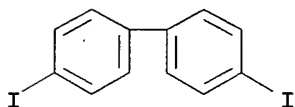
CMF C17 H26 O6



CM 2

CRN 3001-15-8

CMF C12 H8 I2



IC ICM G02F001-1335

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST phase retarder film liq crystal display; photoreactive resin irradiation phase retarder film

IT Liquid crystal displays

(UV irradiation of photoreactive resins in preparation of phase retarder films for)

IT 24968-99-8P 217458-04-3P 217458-06-5P 217458-08-7P

217458-09-8P

RL: DEV (Device component use); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation and UV irradiation in preparation of phase retarder films for liquid-crystal display devices)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 39 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:728659 CAPLUS

DOCUMENT NUMBER: 130:18968

TITLE: Aligning agent for liquid crystal

INVENTOR(S): Endou, Hideyuki; Nihira, Takayasu; Fukuro, Hiroyoshi

PATENT ASSIGNEE(S): Nissan Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 41 pp.

CODEN: PIXXD2

KOROMA EIC1700

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.                                                                 | KIND | DATE     | APPLICATION NO.  | DATE       |
|----------------------------------------------------------------------------|------|----------|------------------|------------|
| WO 9849596                                                                 | A1   | 19981105 | WO 1998-JP1955   | 19980428   |
| W: CN, KR, US                                                              |      |          |                  |            |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                  |            |
| TW 461980                                                                  | B    | 20011101 | TW 1998-87106448 | 19980427   |
| EP 980016                                                                  | A1   | 20000216 | EP 1998-917723   | 19980428   |
| R: DE, FR, GB, IT, NL                                                      |      |          |                  |            |
| JP 11015001                                                                | A2   | 19990122 | JP 1998-120941   | 19980430   |
| US 6274695                                                                 | B1   | 20010814 | US 1999-403766   | 19991101   |
| PRIORITY APPLN. INFO.:                                                     |      |          | JP 1997-113002   | A 19970430 |
|                                                                            |      |          | WO 1998-JP1955   | W 19980428 |

AB An aligning agent for liq. crystals which is for use in a method in which a thin polymer film formed on a substrate is irradiated with polarized UV or electron beams from a given direction based on the plane of the substrate and this substrate is used to align a liq. crystal without rubbing the substrate, characterized by comprising a polymer contg. photochem. reactive groups in the polymer backbone and having a oxide glass transition point of 200 .degree.C or higher.

IT 215736-21-3P, 2,2-Bis(4-aminophenoxyphenyl)propane-muconic acid copolymer 215736-22-4P 215736-25-7P 215736-26-8P 215736-27-9P 215736-30-4P  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (prepd. as liq. crystal aligning agent)

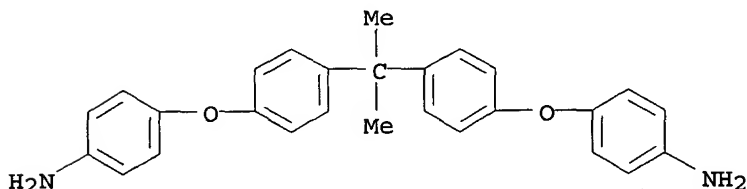
RN 215736-21-3 CAPLUS

CN 2,4-Hexadienedioic acid, polymer with 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 13080-86-9

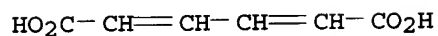
CMF C27 H26 N2 O2



CM 2

CRN 505-70-4

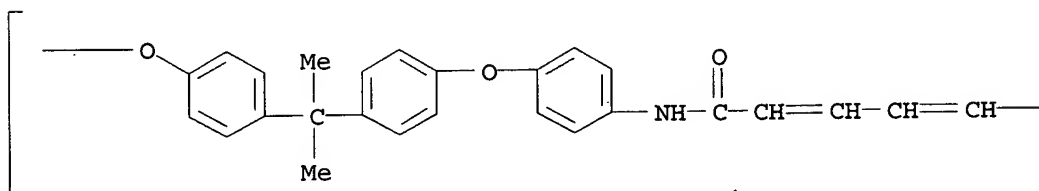
CMF C6 H6 O4



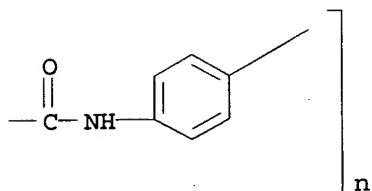
RN 215736-22-4 CAPLUS

CN Poly[oxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenyleneimino(1,6-dioxo-2,4-hexadiene-1,6-diyl)imino-1,4-phenylene] (9CI)  
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B



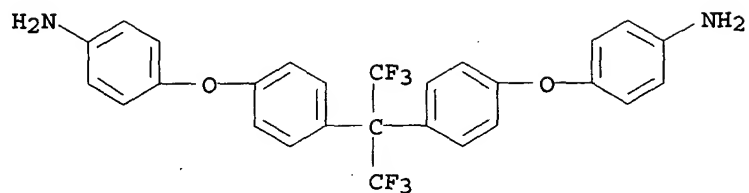
RN 215736-25-7 CAPLUS

CN 2,4-Hexadienedioic acid, polymer with 4,4'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[benzenamine] (9CI)  
(CA INDEX NAME)

CM 1

CRN 69563-88-8

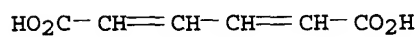
CMF C27 H20 F6 N2 O2



CM 2

CRN 505-70-4

CMF C6 H6 O4



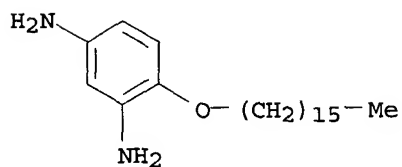
RN 215736-26-8 CAPLUS

CN 2,4-Hexadienedioic acid, polymer with 4-(hexadecyloxy)-1,3-benzenediamine and 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] (9CI)  
(CA INDEX NAME)

CM 1

CRN 137819-03-5

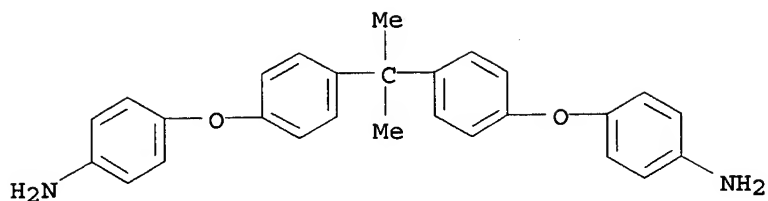
CMF C22 H40 N2 O



CM 2

CRN 13080-86-9

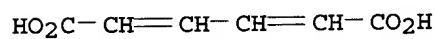
CMF C27 H26 N2 O2



CM 3

CRN 505-70-4

CMF C6 H6 O4



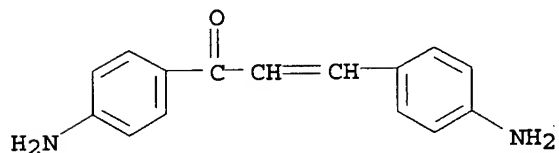
RN 215736-27-9 CAPLUS

CN Cyclobuta[1,2-c:3,4-c']difurantetrone, tetrahydro-, polymer with  
1,3-bis(4-aminophenyl)-2-propen-1-one (9CI) (CA INDEX NAME)

CM 1

CRN 84115-81-1

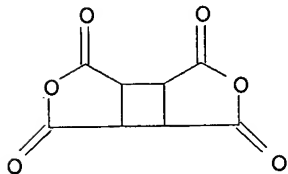
CMF C15 H14 N2 O



CM 2

CRN 4415-87-6

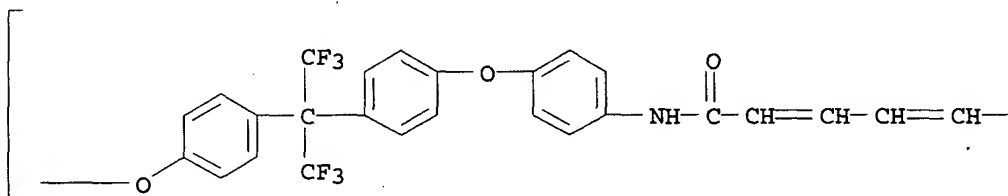
CMF C8 H4 O6



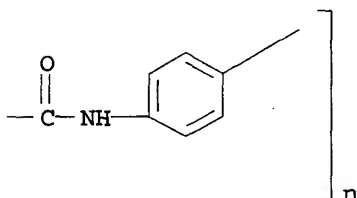
KOROMA EIC1700

RN 215736-30-4 CAPLUS  
 CN Poly[oxy-1,4-phenylene[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-1,4-phenyleneoxy-1,4-phenyleneimino(1,6-dioxo-2,4-hexadiene-1,6-diyl)imino-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM G02F001-1337  
 ICS C08G069-26; C08G073-10  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST **photosensitive polymer aligning agent liq crystal**  
 IT **Liquid crystals**  
     (photosensitive polymeric aligning agent for liq. crystal)  
 IT Polyamic acids  
     Polyamides, preparation  
     Polyimides, preparation  
     RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
     (prepd. as liq. crystal aligning agent)  
 IT 215868-82-9P  
     RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
     (epd. as liq. crystal aligning agent)  
 IT 214919-26-3P 214919-29-6P 215736-21-3P, 2,2-Bis(4-aminophenoxyphenyl)propane-muconic acid copolymer 215736-22-4P  
     215736-23-5P 215736-24-6P 215736-25-7P 215736-26-8P  
     215736-27-9P 215736-28-0P 215736-29-1P 215736-30-4P  
     RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(prepd. as liq. crystal aligning agent)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 40 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:317141 CAPLUS

DOCUMENT NUMBER: 125:99761

TITLE: **Photosensitive** characteristics of poly(methacrylates) containing

AUTHOR(S): benzylidenephthalimidine moieties on the side chain Hae, Suh Dong; Hayashi, Yuko; Kudo, Kazuaki; Ichimura, Kunihiro

CORPORATE SOURCE: Res. Laboratory of Resources Utilization, Tokyo Inst. of Technology, Yokohama, 226, Japan

SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1996), 280, 97-102  
CODEN: MCLCE9; ISSN: 1058-725X

PUBLISHER: Gordon & Breach

DOCUMENT TYPE: Journal

LANGUAGE: English

AB **Photosensitive** polymethacrylates having benzylidenephthalimidine(BPI) moiety on the side chains were synthesized. Upon photoirradn. of the polymer film, there occurred two kinds of photoreactions; the E/Z photoisomerization and [2+2] cycloaddn. The cycloaddn. of BPI units of polymers resulted in the crosslinking of the polymer chains. The quantum yield for the photocrosslinking reaction was estd. from gelation expt. Irradn. of the film with linearly polarized UV light induced a dichroism of BPI. Linearly polarized UV light irradn. of a nematic liq. crystals (LCs) cell assembled with a glass plate surface-modified with a poly[N-(2-methacryloyloxy)ethyl-p-methoxy benzylidenephthalimidine] film brought about the homogeneous alignment.

IT 178969-19-2P 178969-20-5P

RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**; PROC (Process); RACT (Reactant or reagent)

(photochem. of methacrylate polymers contg. benzylidenephthalimidine side chain for photocontrol of liq. crystal alignment)

RN 178969-19-2 CAPLUS

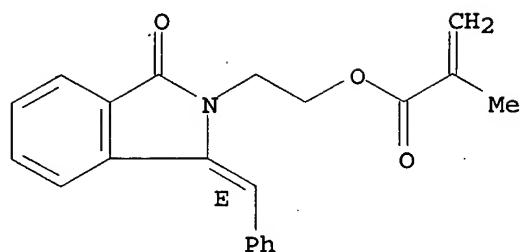
CN 2-Propenoic acid, 2-methyl-, 2-[1,3-dihydro-1-oxo-3-(phenylmethylene)-2H-isoindol-2-yl]ethyl ester, (E)-, polymer with methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 178969-17-0

CMF C21 H19 N O3

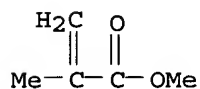
Double bond geometry as shown.



CM 2

CRN 80-62-6

CMF C5 H8 O2



RN 178969-20-5 CAPLUS

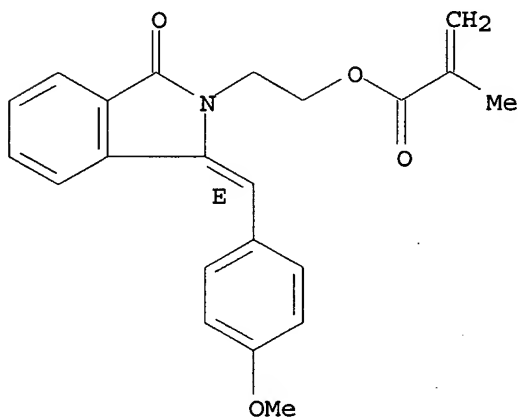
CN 2-Propenoic acid, 2-methyl-, 2-[1,3-dihydro-1-[(4-methoxyphenyl)methylene]-3-oxo-2H-isoidol-2-yl]ethyl ester, (E)-, polymer with methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 178969-18-1

CMF C22 H21 N O4

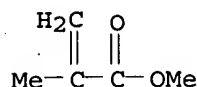
Double bond geometry as shown.



CM 2

KOROMA EIC1700

CRN 80-62-6  
CMF C5 H8 O2



- CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST photochem **photosensitive** methacrylate polymer  
benzylidenephthalimidine pendant; **liq crystal**  
alignment methacrylate polymer benzylidenephthalimidine; photoalignment  
**liq crystal** methacrylate polymer  
benzylidenephthalimidine
- IT Photolysis  
(photochem. of methacrylate polymers contg. benzylidenephthalimidine  
side chain for **liq. crystal** alignment)
- IT Cycloaddition reaction  
([2+2], photochem.; photochem. of methacrylate polymers contg.  
benzylidenephthalimidine side chain for **liq. crystal**  
alignment)
- IT Isomerization  
(cis-trans, photochem., photochem. of methacrylate polymers contg.  
benzylidenephthalimidine side chain for **liq. crystal**  
alignment)
- IT Optical imaging devices  
(electrooptical **liq.-crystal**, photocontrol of  
alignment of **liq. crystal** by **photosensitive**  
methacrylate polymers contg. benzylidenephthalimidine side chain)
- IT Crosslinking  
(photochem., photochem. of methacrylate polymers contg.  
benzylidenephthalimidine side chain for **liq. crystal**  
alignment)
- IT **178969-19-2P 178969-20-5P**  
RL: PEP (Physical, engineering or chemical process); PNU (Preparation,  
unclassified); RCT (Reactant); **PREP (Preparation)**; PROC  
(Process); RACT (Reactant or reagent)  
(photochem. of methacrylate polymers contg. benzylidenephthalimidine  
side chain for photocontrol of **liq. crystal**  
alignment)
- IT 152556-04-2, NPC-02  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(photocontrol of alignment of **liq. crystal** by  
**photosensitive** methacrylate polymers contg.  
benzylidenephthalimidine side chain)
- IT 178969-17-0P 178969-18-1P  
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP**  
(**Preparation**); RACT (Reactant or reagent)  
(prepn. and polymn. with Me methacrylate)

IT 178969-15-8P 178969-16-9P  
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP**  
(Preparation); RACT (Reactant or reagent)  
(prepn. and reaction with methacryloyl chloride)  
IT 920-46-7, Methacryloyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with benzylidenephthalimidine derivs.)

L25 ANSWER 41 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1994:422311 CAPLUS

DOCUMENT NUMBER: 121:22311

TITLE: Azo polymers for reversible optical storage. III.  
Effect of film thickness on net phase retardation and  
writing speed

AUTHOR(S): Rochon, P.; Bissonnette, D.; Natansohn, A.; Xie, S.

CORPORATE SOURCE: Dep. Phys., R. Mil. Coll. Canada, Kingston, ON, K7K  
5L0, Can.

SOURCE: Applied Optics (1993), 32(35), 7277-80

CODEN: APOPAI; ISSN: 0003-6935

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The optical writing phenomenon obsd. on azo arom.-contg. polymer thin  
films exhibits a writing rate proportional to the intensity of the writing  
beam. This property of the mechanisms for optically inducing dichroism  
and birefringence results directly in nonlinear optical behavior in the  
thin film. The net phase retardation obtainable and the writing rates are  
functions of the thin-film thickness that reflect this nonlinear behavior.

IT 139427-10-4

RL: USES (Uses)

(optical reversible recording in film of, effect of film  
thickness on net phase retardation and writing speed in)

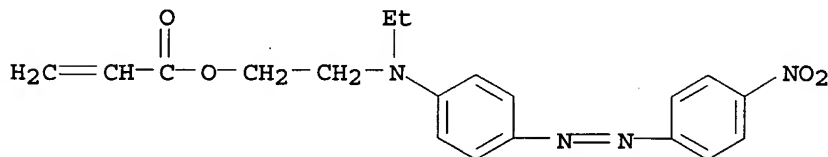
RN 139427-10-4 CAPLUS

CN 2-Propenoic acid, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]ethyl ester,  
homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 13695-46-0

CMF C19 H20 N4 O4



CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

Section cross-reference(s): 73

ST azo polymer reversible optical storage recording

KOROMA EIC1700

IT Optical nonlinear property  
 (of azo polymer optical recording film, effect of film thickness on net phase retardation and writing speed in)

IT Memory devices  
 (holog., azo polymer film for, effect of film thickness on net phase retardation and writing speed in)

IT Holography  
 (memory devices, azo polymer film for, effect of film thickness on net phase retardation and writing speed in)

IT Recording materials  
 (optical, reversible, in azo polymers, effect of film thickness on net phase retardation and writing speed in)

IT Dichroism  
 (photoinduced, in azo polymer optical recording film, effect of film thickness on net phase retardation and writing speed in)

IT 139427-10-4  
 RL: USES (Uses)  
 (optical reversible recording in film of, effect of film thickness on net phase retardation and writing speed in)

L25 ANSWER 42 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1992:661295 CAPLUS

DOCUMENT NUMBER: 117:261295

TITLE: Polyamide alignment film for liquid crystal display devices

INVENTOR(S): Okunoyama, Teru

PATENT ASSIGNEE(S): Toshiba Chemical K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent

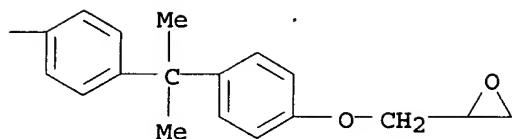
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 04062522            | A2   | 19920227 | JP 1990-175063  | 19900702 |
| JP 2841348             | B2   | 19981224 |                 |          |
| PRIORITY APPLN. INFO.: |      |          | JP 1990-175063  | 19900702 |
| GI                     |      |          |                 |          |

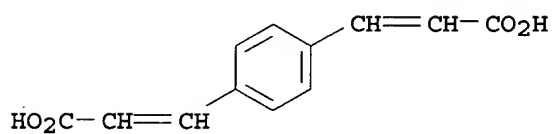
PAGE 1-B



CM 2

CRN 16323-43-6

CMF C12 H10 O4



RN 143986-68-9 CAPLUS

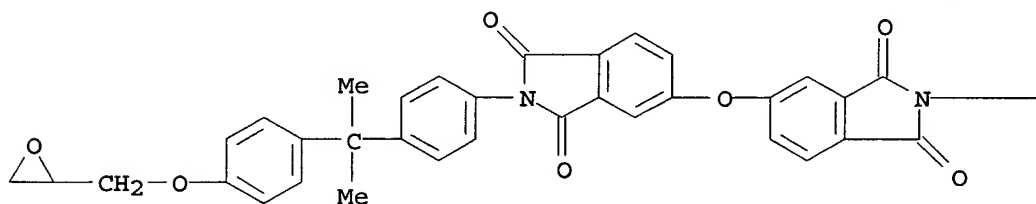
CN 2-Propenoic acid, 3,3'-(1,4-phenylene)bis-, polymer with  
5,5'-oxybis[2-[4-[1-methyl-1-[4-(oxiranylmethoxy)phenyl]ethyl]phenyl]-1H-  
isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

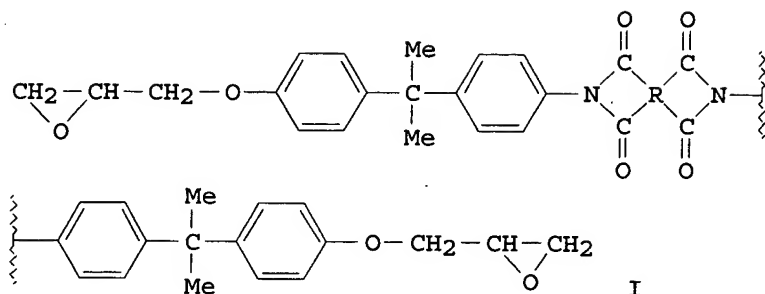
CM 1

CRN 143986-67-8

CMF C52 H44 N2 O9

PAGE 1-A





AB The film is made by the steps of: prepg. a UV-curable polymer by polymg. a mixt. comprising a **photosensitizer**, a photoinitiator, phenylenediacyrylic acid, and I [R = C<sub>6</sub>H<sub>2</sub>, C<sub>6</sub>H<sub>3</sub>C<sub>6</sub>H<sub>3</sub>, C<sub>6</sub>H<sub>3</sub>XC<sub>6</sub>H<sub>3</sub>; X = CO, O, SO<sub>2</sub>, C(CF<sub>3</sub>)<sub>2</sub>]; coating a sol. of the polymer on a substrate having an electrode layer; forming a **film** layer by UV-curing the coating; and rubbing the unaligned **film** unidirectionally. The **film** retains a long-life aligned ordering at elevated temps. and can be employed on a flexing substrate.

IT 143986-66-7P 143986-68-9P 144012-01-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and use of, as polyamide alignment film, for  
liq. crystal display devices)

RN 143986-66-7 CAPLUS

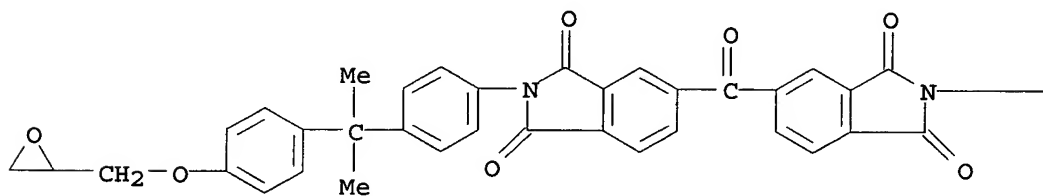
CN 2-Propenoic acid, 3,3'-(1,4-phenylene)bis-, polymer with  
5,5'-carbonylbis[2-[4-[1-methyl-1-[4-(oxiranylmethoxy)phenyl]ethyl]phenyl]-  
1H-isindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

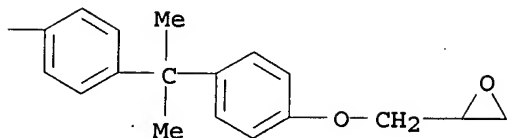
CRN 143986-65-6

CMF C53 H44 N2 O9

PAGE 1-A



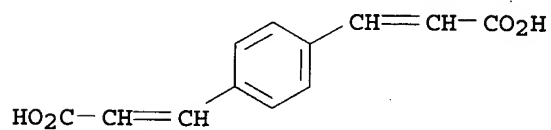
PAGE 1-B



CM 2

CRN 16323-43-6

CMF C12 H10 O4



RN 144012-01-1 CAPLUS

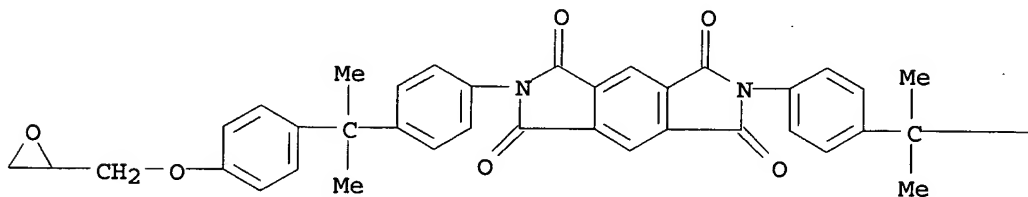
CN 2-Propenoic acid, 3,3'-(1,4-phenylene)bis-, polymer with  
2,6-bis[4-[1-methyl-1-[4-(oxiranylmethoxy)phenyl]ethyl]phenyl]benzo[1,2-  
c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone (9CI) (CA INDEX NAME)

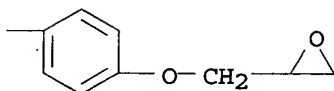
CM 1

CRN 144012-00-0

CMF C46 H40 N2 O8

PAGE 1-A

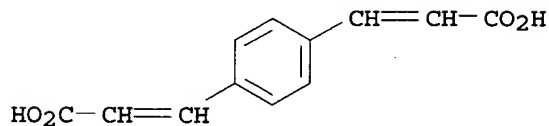




CM 2

CRN 16323-43-6

CMF C12 H10 O4



IC ICM G02F001-1337

ICS G09F009-30

CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38

ST polyamide alignment film liq crystal display

IT Polyimides, uses

RL: IMF (Industrial manufacture); PREP (Preparation)

(alignment films, for liq. crystal display devices, manuf. of)

IT Optical imaging devices

(electro-, liq.-crystal, polyamide alignment films, manuf. of)

IT 143986-66-7P 143986-68-9P 144012-01-1P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. and use of, as polyamide alignment film, for liq. crystal display devices)

L25 ANSWER 43 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1990:425053 CAPLUS

DOCUMENT NUMBER: 113:25053

TITLE: Bis(benzoylvinyl)benzenes, their manufacture, resin compositions containing them, and cured products thereof

INVENTOR(S): Nishikawa, Akio; Koyama, Toru; Asano, Hideki; Narahara, Toshikazu

PATENT ASSIGNEE(S): Hitachi, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

KOROMA EIC1700

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

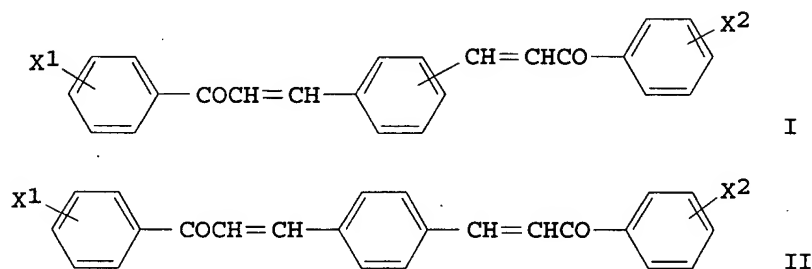
LANGUAGE:

Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.                   | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------------|------|----------|-----------------|----------|
| JP 01056643                  | A2   | 19890303 | JP 1987-212691  | 19870828 |
| JP 07096519                  | B4   | 19951018 |                 |          |
| PRIORITY APPLN. INFO.:<br>GI |      |          | JP 1987-212691  | 19870828 |



AB The title compds. (I; X1, X2 = NHR, OR, CN, C.tplbond.CH, unsatd. cyclic imide linked via N; R= H, CN) are prepd. and crosslinked in polymer compns. Maleic anhydride was added to II (X1 = X2 = NH2) in Me2CO at <5.degree. with stirring and the mixt. treated with Ac2O contg. KOAc to give II (X1 = X2 = maleimido), which (100 parts) was mixed with 2,2-bis[4-(4-maleimidophenoxy)phenyl]propane 100, quartz powder 7, stearic acid 2, and carbon black 1 part at 150-170.degree. to give a crosslinked polymer with glass-transition temp. 225.degree., flexural strength 535 kg/cm2 at 180.degree. and retaining 100% of that strength for 30 days at 200.degree.. Similarly prepd. were 3 addnl. I, which were also copolymd. with bisphenol A derivs.

IT 124036-40-4

RL: USES (Uses)

(polyester film coated with, in manuf. of liq.  
crystal display devices)

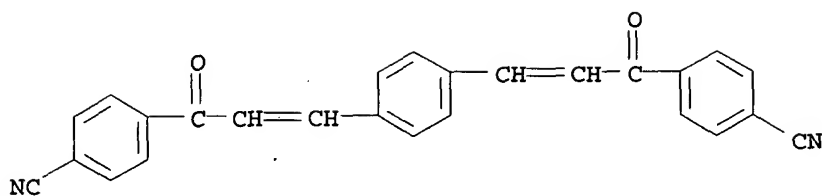
RN 124036-40-4 CAPLUS

CN Benzonitrile, 4,4'-[1,4-phenylenebis(1-oxo-2-propene-3,1-diyl)]bis-,  
homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 124036-39-1

CMF C26 H16 N2 O2



- IC ICM C07C049-796  
ICS C07C049-835; C07C097-10; C07C121-76; C07C125-08; C07D207-448;  
C07D207-452; C07D209-76; C08F002-48; C08F016-36; C08F022-40;  
C08F246-00; G03C001-68; G03C001-71
- CC 37-2 (Plastics Manufacture and Processing)  
Section cross-reference(s): 25
- ST benzoylvinybenzene prepn crosslinking agent; **photosensitive**  
polymer intermediate bisbenzoylvinybenzene; heat resistance polymer compn
- IT Epoxy resins, uses and miscellaneous  
RL: USES (Uses)  
(crosslinking agents for, bis[(aminobenzoyl)viny]benzene derivs. as)
- IT Optical imaging devices  
(**liq.-crystal**, poly[bis[(cyanobenzoyl)viny]benzene  
]-coated poly(ethylene terephthalate) **films** in manuf. of)
- IT Crosslinking agents  
(photochem., bis(aminobenzoylviny)benzene derivs. as)
- IT Electric circuits  
(printed, multilayer, manuf. of, insulating varnish for;  
poly[bis[(maleimidobenzoyl)viny]benzene] for)
- IT Polyesters, uses and miscellaneous  
RL: USES (Uses)  
(unsatd., crosslinking agents for, bis[(aminobenzoyl)viny]benzene  
derivs. as)
- IT 9002-84-0  
RL: USES (Uses)  
(bis[(ethynylbenzoyl)viny]benzene polymer blends, graphite-contg., as  
sliding surface for porous metal plates)
- IT 108-31-6, Maleic anhydride, reactions 826-62-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclocondensation of, with bis[(aminobenzoyl)viny]benzene)
- IT 110432-73-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclocondensation of, with maleic anhydride)
- IT 25038-59-9, uses and miscellaneous  
RL: USES (Uses)  
(**films**, poly[bis[(cyanobenzoyl)viny]benzene]-coated, in  
manuf. of **liq. crystal** display devices)
- IT 124011-21-8 124086-98-2  
RL: USES (Uses)  
(glass cloth prepregs, lamination of)
- IT 124036-41-5 124086-99-3  
RL: USES (Uses)  
(insulating varnish, in manuf. of multilayer printed circuits)

- IT 123991-09-3DP, polymers with novolak epoxy resins 124086-96-0P  
124086-97-1P 124124-76-1P 124124-77-2P 124307-89-7P  
RL: PEP (Physical, engineering or chemical process); PREP  
(Preparation); PROC (Process)  
(manuf. of heat-resistant, with high flexural strength)
- IT 124036-43-7P  
RL: PREP (Preparation)  
(manuf. of photocurable)
- IT 124036-38-0  
RL: USES (Uses)  
(poly(tetrafluoroethylene) blends, graphite-contg., as sliding surface  
for porous metal plates)
- IT 124036-40-4  
RL: USES (Uses)  
(polyester film coated with, in manuf. of liq.  
crystal display devices)
- IT 7782-42-5, Graphite, uses and miscellaneous  
RL: USES (Uses)  
(polymer blends contg., as sliding surface for porous metal plates)
- IT 124802-76-2  
RL: USES (Uses)  
(potting compn., for one-megabit D-RAM chip)
- IT 123991-08-2P  
RL: PREP (Preparation)  
(prepn. of)
- IT 123991-07-1P 123991-09-3P 124011-36-5P 124029-80-7P  
RL: PREP (Preparation)  
(prepn. of, as crosslinking agent)
- IT 506-68-3, Cyanogen bromide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bis[(aminobenzoyl)vinyl]benzene)

L25 ANSWER 44 OF 44 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1989:497848 CAPLUS

DOCUMENT NUMBER: 111:97848

TITLE: Synthesis and thermal properties of  
**photosensitive** polyacrylic systems with  
cinnamic acid-containing side chains and their use in  
composite membranes

AUTHOR(S): Koch, Thomas; Ritter, Helmut; Buchholz, Norbert;  
Knoechel, Friedrich

CORPORATE SOURCE: Bergische Univ.-Gesamthochsch., Wuppertal, D-5600,  
Fed. Rep. Ger.

SOURCE: Makromolekulare Chemie (1989), 190(6), 1369-77  
CODEN: MACEAK; ISSN: 0025-116X

DOCUMENT TYPE: Journal

LANGUAGE: German

AB The synthesis of comblike polymers contg. cinnamic acid derivs. in the  
side chains was described. The disappearance of thermal transitions after  
UV irradiation of the polymer samples was demonstrated by DSC measurements in  
the case of liq.-cryst. poly[4-propoxyphenyl  
4-(6-acryloyloxyhexyloxy)cinnamate] and side-chain crystallizable

4-(6-acryloyloxyhexyloxy)cinnamic acid-hexadecyl acrylate copolymer. A significant influence of UV irradiation on the permeation activation energy of BuOH through polyamide composite membranes containing a film of the photosensitive comblike polymers was observed.

IT 122276-53-3P, Poly[4-propyloxyphenyl 4-(6-acryloyloxyhexyloxy)cinnamate]

RL: SPN (Synthetic preparation); PREP (Preparation)  
(liq.-cryst., prepn. and characterization of)

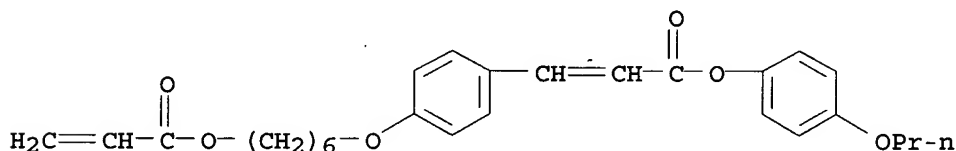
RN 122276-53-3 CAPLUS

CN 2-Propenoic acid, 3-[4-[[6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]phenyl]-, 4-propoxyphenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 122246-56-4

CMF C27 H32 O6



CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 37, 75

ST cinnamic acid polyacrylate **photosensitivity**; polypropoxyphenyl acryloyloxyhexyloxycinnamate **liq crystal**; butanol permeation polyamide polyacrylate membrane

IT **Liquid crystals**

(cinnamic acid side chain-contg. polyacrylate, prepn. and characterization of)

IT Light-sensitive materials

(membranes, arom. polyamide-liq. **cryst.**

polyacrylate composite, prepn. and thermal properties of)

IT Permeability and Permeation

(of butanol, through polyamide-cinnamic acid side chain-contg. polyacrylate composite membranes)

IT Heat of transition

(of cinnamic acid side chain-contg. polyacrylates)

IT Polymer morphology

(of liq.-**cryst.** cinnamic acid side chain-contg. polyacrylates)

IT Polyamides, uses and miscellaneous

RL: USES (Uses)

(poly(phenyleneisophthalamide), composite membranes with cinnamic acid side chain-contg. polyacrylates, permeation of butanol through)

IT 24938-60-1, Isophthalic acid-m-phenylenediamine copolymer, SRU

25035-33-0, Isophthalic acid-m-phenylenediamine copolymer

RL: USES (Uses)

(composite membranes with cinnamic acid side group-contg.)

- polyacrylates, permeation of butanol through)
- IT 122276-53-3P, Poly[4-propyloxyphenyl 4-(6-acryloyloxyhexyloxy)cinnamate]  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (liq.-cryst., prepn. and characterization of)
- IT 71-36-3, 1-Butanol, properties  
 RL: PRP (Properties)  
 (permeation of, through polyamide-polyacrylate composite membranes)
- IT 122276-51-1P, Poly[4-(6-acryloyloxyhexyloxy)cinnamic acid] 122276-52-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and characterization of)
- IT 122246-55-3P 122246-56-4P, 4-Propoxyphenyl 4-(6-acryloyloxyhexyloxy)cinnamate  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and polymn. of)
- IT 122246-54-2P, 4-(6-Hydroxyhexyloxy)cinnamic acid  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and reaction of, with acryloyl chloride)
- IT 18979-50-5, Hydroquinonemonopropyl ether  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with (acryloyloxyhexyloxy)cinnamic acid)
- IT 814-68-6, 2-Propenoyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with (hydroxyhexyloxy)cinnamic acid)
- IT 7400-08-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with chlorohexanol)
- IT 2009-83-8, 6-Chlorohexanol  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxycinnamic acid)